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Vol. CII

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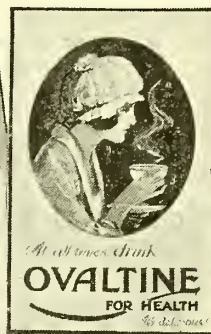
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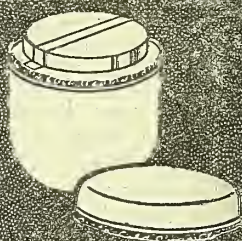
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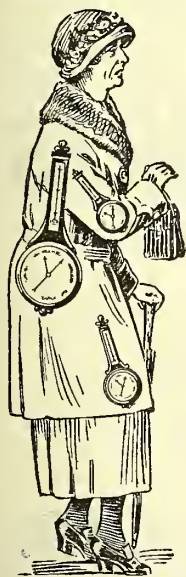
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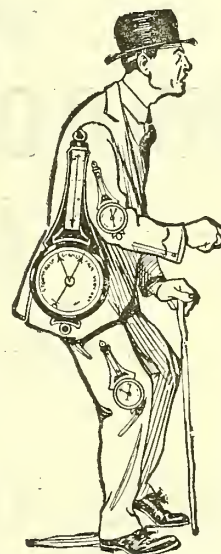
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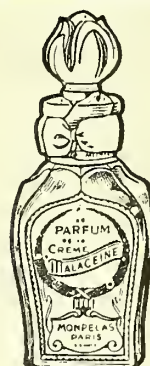
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½ " 1/9 Soap	7 6	10 6
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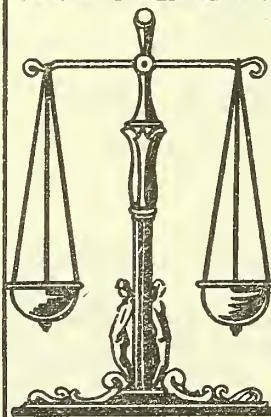


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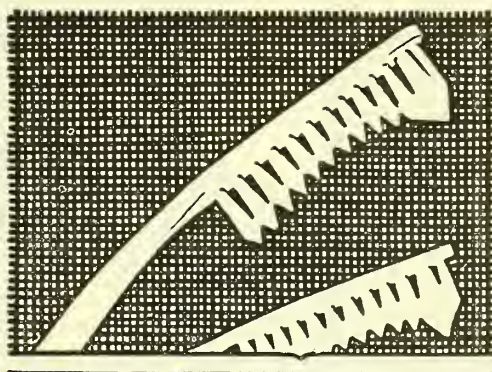
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Maw's



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Ladies' ditto	16/-	2/-
Child's in two degrees, 6 medium and 6 soft in each dozen ..	12/-	1/6
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OFFICIAL LONG-HANDLED PATTERN , with lengthened handle to afford an easier and more powerful grip		
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in this
Tin**

IT is filled and sealed in Italy with the finest Olive Oil by the largest Olive Oil manufacturers in that country. The Oil comes to you unaffected by light and air, and unsurpassed in purity and flavour. Ask for it by name.

SASSO OLIVE OIL

Obtainable at all leading Stores.
Salad and Sauce Recipe Book free. Send a post card for this splendid book of recipes, which are out of the ordinary, to
Sole Distributors of Sasso Olive Oil:
15, 16, 17, Jewry St., LONDON, E.C.3

**One of the
Daily Mail
advertisements
which are appear-
ing regularly
throughout the
season**

SASSO

Olive Oil

Manufactured by

P. Sasso e Figli, Oneglia, Italy

The Largest Olive Oil Factory in Italy.

PACKED IN TINS, CASES & BARRELS.

GRAND PRIX, GENOA, 1914; SAN FRANCISCO, 1915; RIO DE JANEIRO, 1923

SOLE AGENTS:

FREDK. BOEHM LTD.,
15, 16, 17, JEWRY STREET, LONDON, E.C.3.

Telephone: ROYAL 3445 (3 lines).

Telegrams: "BISSULA, TELEW, LONDON."

Telewriter: Walbrook 596.



LYSOL EVANS'

is manufactured by ourselves and, in keeping with all our other products, is of the highest efficiency.

It is perfectly soluble, making a brilliant solution in hard or soft water.

It contains 50% Cresol and answers the test of the B.P.C.

Every batch is standardised in our Bacteriological Laboratories.

We are prepared to quote special prices for gross orders assorted.

**YOU CANNOT
BUY BETTER
LYSOL THAN
EVANS'**

SIZES.

In 4oz., 8oz., 16oz.
and 32oz.

With Aluminium Measure.

Evans

EVANS SONS LESCHER & WEBB, LTD.

LIVERPOOL

New York

LONDON



*Mysore Government Seal
is your guarantee that
the Oil is the finest in
the World*

EAST INDIAN SANDALWOOD OIL

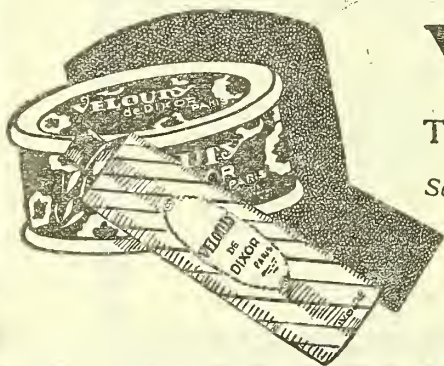
Sole European Distributors:

ESSENFLOUR PRODUCTS LTD.

"Perfume House" 6, 7 & 8 BEAUCHAMP STREET, LONDON, E.C.1

Telephone: HOLBORN 2499, 6214, 6215 (3 lines).

Telegrams: "EKDUM, LONDON."



VELOURY de DIXOR PARIS..

COMBINED CREAM AND POWDER

The advertised line that you are asked for.

DAINTY PRESENTATION

Samples free upon receipt of tradecard or billhead.

Prices:—Full size pot	21/- doz.	Retail	...	...	2/9
Super Tube	22/- "	"	...	...	3/-
Large "	14/- "	"	...	...	2/-
Handbag "	3/- "	"	...	...	6d.

Obtainable from your regular Wholesaler or direct from the Sole British Agents:
DEBACQ & HARROP, 7 Little Goodge Street, LONDON, W.1

DODGE & OLCOTT CO.,

20 MARK LANE,
LONDON, E.C.3.

THE "D & O" BRAND

is the "Standard of Quality" for

OILS of BAY, CEDARWOOD, PATCHOULI, PEPPERMINT,
SASSAFRAS, ETC.

BALSAMS of Copaiba, Peru, Tolu.
TONKA BEANS, Angosturas.

Phone—
ROYAL 3843.

Telegrams—
"EGDARF, FEN, LONDON."

BUY Californian

OIL OF SWEET ORANGE

PRODUCED BY
THE EXCHANGE ORANGE PRODUCTS Co., San Dimas, Cal.

ASK YOUR DEALER FOR SAMPLE and QUOTATION. SPOT GOODS.

THE CHEAPEST SOURCE OF ORANGE FLAVOUR

DEALERS SHOULD GET IN TOUCH WITH THE EUROPEAN DISTRIBUTORS:

TELEPHONE:
ROYAL 2777
2778
2652

WHEELER & HUISKING, LTD.
26 & 27 GREAT TOWER STREET, LONDON, E.C.3

E. SACHSSE & CO.

LEIPZIG GERMANY

Manufacturers & Distillers of

**TERPENE & SESQUITERPENE
FREE OILS (T.S.F.)**

**ALL B.P. ESSENTIAL OILS
FLOWER OILS**

COMPOUND PERFUMES

ORRIS OIL PRODUCTS, ETC.

WRITE FOR PRICE LIST AND SAMPLES.

Sole Agents U.K.:

T. HARRISON & CO.

BURNLEY HOUSE, WILLESDEN, N.W.10.

IMPORTERS OF DRUGS, CHEMICALS,
ESSENTIAL OILS, ETC.

Telephone:
Willesden 731.

Telegrams:
"Arismercha, Willroad, London."

STOCKS IN LONDON.

Established 1795.

LAUTIER FILS

Works : GRASSE (France) & BEYRUT (Syria).

Essential Oils ——— Synthetics.
All Raw Materials for Perfumery.

Absinth	Laurel
Almond, bitter,	Lavender
Angelica (S.A.P.)	Lemon
Basil	Mace
Bay	Melissa
Bergamot	Neroli big and Syn.
Bols de Rose femelle	Orange
Cajuput	Otto de Rose
Caraway	Patchouli
Cinnamon	Peppermint
Cloves	Rosemary
Copaiba	Rue
Costus	Sandalwood
Cubeb	Spike Lavender
Fennel	Tansy
Geranium	Tarragon
Honey	Thyme
Hyssop	Vetivert

**Olive, Peach Kernel, Sweet Almond Oils
Floral Waters.**

Wholesale and Export only.

LAUTIER FILS, Ltd., 4 Denman St., London Bdg., S.E.1
Tel. Add.: "LAUTIER, PHONE LONDON." Telephone: HOPE 2819.

DEARBORN (1923) LTD.

37 Gray's Inn Road, London, W.C.1

Toilet Specialties.

	Price per doz. to Retailer	Selling Price P.A.T.A.
PILENTA SOAP ...	10/-	1/-
A complexion soap.		
PROLACTUM ...	10/-	1/-
For the lips.		
PARSIDIUM JELLY ...	10/-	1/-
For wrinkles.		
ALLACITE OF ORANGE		
BLOSSOM ...	22/6	2/6
A dressing cream.		
BORANIUM ...	22/6	2/6
A hair tonic.		
CLEMINITE ...	22/6	2/6
For a face lotion.		
COLLIANDUM ...	22/6	2/6
For a face tint.		
PERGOL ...	22/6	2/6
A deodorant.		
TEKMO PASTE ...	22/6	2/6
Camphor cream.		
STALLAX ...	22/6	2/6
For a shampoo.		
JETTALINE ...	31/6	3/6
For clearing the skin.		
PHEMINOL ...	36/-	4/-
A depilatory.		
MENNALINE ...	36/-	4/-
For the eyelashes.		
MERCOLIZED WAX ...	18/- 31/6	2/- 3/6
A face cream.		
STYMOL ...	36/-	4/-
For oily complexions and blackheads.		
SILMERINE ...	22/6	2/6
Hair-curling fluid.		
BARSYDE ...	22/6	2/6
Dandruff eradicator.		
TAMMALITE ...	22/6	2/6
For grey and faded hair.		
LIQUID PERGOL ...	31/6	3/6
To check excessive perspiration locally.		
BICROLIUM ...	22/6	2/6
For whitening the hands.		
COCONOIDS ...	31/6	3/6
For figure development.		

The Products of

Messrs. PARKER, BELMONT & CO.

CLYNOL BERRIES ...	36/- 58/6	4/- 6/6
For obesity.		
SOFT PALERIUM ...	45/-	5/-
For wrinkles.		
LIQUID NAIL POLISH ...	10/-	1/-
Brilliant and lasting.		

Stocked by ALL Wholesale Houses.

COLONIAL DEPÔTS AND AGENCIES.

Australia: ALL WHOLESALE, & DEARBORN (Australia), Ltd., Grace House, Clarence Street, Sydney.
South Africa: LENNON, Ltd., Cape Town, etc.
SIVE BROS. & KARNOVSKY, Johannesburg.
India: FRAMJEE & SON, Bombay.
 A. L. CHOUDRY, Calcutta.
New Zealand: SHARLAND & CO., Auckland and Wellington.
South America: DEARBORN (South America) Ltd., Calle Pavon 2100, Buenos Aires.
Circus Settlements & Federated Malay States: MEDICAL HALL, Ltd., Singapore.



A BIG SELLER

The "YVONNE" COMBINATION POWDER PUFF

This unique Puff, made of the best quality lambs' wool, actually holds the powder and does away with the necessity of carrying a separate box of powder.

The Puff has a sifter lining which diffuses the powder evenly over the outside face of the Puff.

ONE CHARGE OF POWDER
LASTS FOR SEVERAL DAYS.
SAVES POWDER.
DOES AWAY WITH THE
POWDER BOX.
ALWAYS READY FOR USE.

Supplied in three sizes, each puff in a separate fancy box, with descriptive showcard.

RETAIL	1/-	1/3	1/6
PRICES PER DOZ.	8/-	10/-	12/-
In 3 doz. lots (one size)	7/-	9/-	11/-

Gilt Vanity Boxes, with mirror inside, supplied to hold the two smaller sizes.

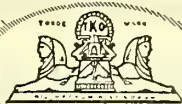
SPURWAY ET CIE, LTD.

89 Great Eastern Street,
LONDON :: :: E.C.2.

CANNES-GRASSE, RIVIERA.
PARIS.

LEIPSIC NEW YORK
KINGSTON (ONTARIO)

Telegrams - "NEROLI, LONDON."
Telephone - BISHOPSGATE 1372.



The EASINESS of "DISTOL" OTTOS

Take 2 to 4 drams of any "Distol" according to the strength required, and add S.V.R. and Aqua Dest. to make up to twenty ounces

—and that's all!

Nothing could be easier than the preparation of good perfumery from "Distol" Ottos, and the economies that result are considerable. Make up your proprietary perfumes with "Distol" Ottos. Use "Distols" for your own distinctive toilet preparations.

There are 45 "Distols" selling at the uniform price of 7/6 per ounce. An ounce of any "Distol" makes 80 ozs. of good perfumery, or 40 ozs. of "De Luxe" quality, such as will compete with the most expensive brands on the market.

Ask for free samples of perfumes made from any six "Distols"

"Distols" and Spirit Economy

"Distol" perfumery can be made in small quantities as required, thus obviating the locking-up of capital in extensive stocks of S.V.R. Most "Distols" lend themselves to considerable dilution with Aqua Dest. without loss of their distinctive characteristics.



Kerfoot Quality is Chemists' Quality

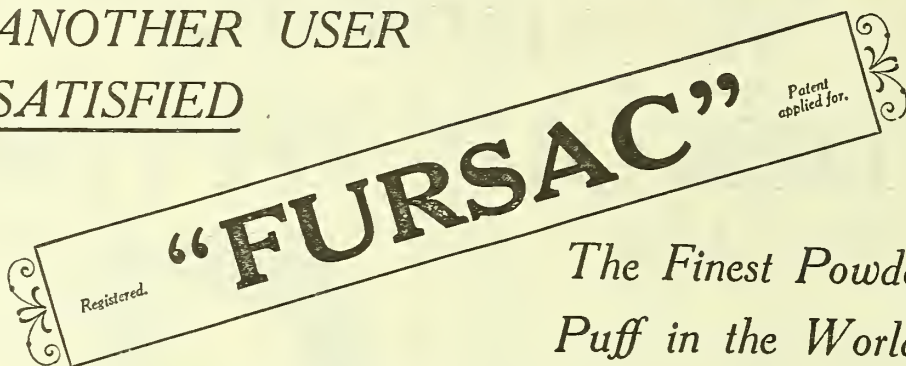
THOMAS KERFOOT & CO. LTD.
BARDSLEY VALE, LANCASHIRE,
& Bardsley House, London, N.1
ESTABLISHED 1797.

A/870

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A "FURSAC" SOLD—A "FURSAC" TRIED

ANOTHER USER
SATISFIED



*The Finest Powder
Puff in the World.*

From all Druggists' Sundriesmen, or direct from

FLETCHER SQUIRES & CO.

Phone: Riverside 3110.

70 GOLDHAWK ROAD, W.12.

"Dorin" Beauty Preparations

**"ROUGE BRUNETTE"
& "UN AIR DE PARIS"**

FACE POWDER

are now being

ADVERTISED TO THE PUBLIC

Dorin Ltd., 41 Charterhouse Square,
Delivery from Stock. LONDON, E.C.1.

Tatcho-tone

For GREY HAIR

TATCHO-TONE CO., 5 Gt. Queen Street, London, W.C.

PRICES
Ed. Trial phial
per doz. 5/9
Per doz.
2/6 size, 21/-
4/6 42/-



SHADEINE

For COLOURING GREY HAIR

This popular article is largely advertised
and stocked by all Wholesale Houses.
Trial size 8d. per doz. 6/-
1/4 size, per doz. 12/-
2/6 size, per doz. 24/-
2/9 size, per doz. 28/-

The SHADEINE CO., 58 Westbourne Grove, London, W.2.

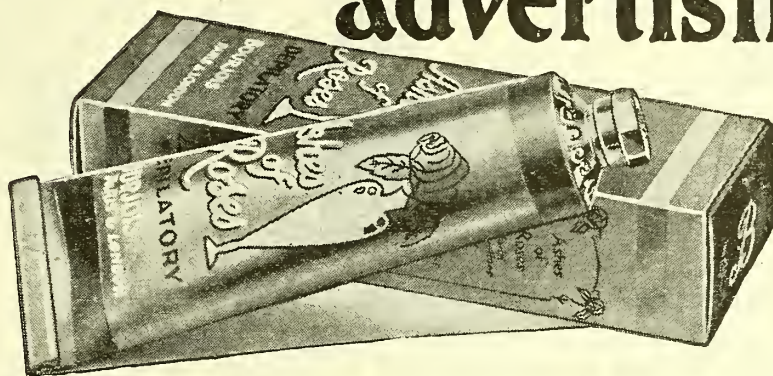
BEETHAM'S

TOILET LINES
ARE GOOD STOCK

Sait Larola *Larola Rose Bloom*
Glycerine & Cucumber

M. BEETHAM & SON, CHELTENHAM

'That's sane commonsense advertising'



This was the remark of a chemist upon being shown the advertising for the new member of the *Ashes & Roses* Series.

Ashes & Roses DEPILATORY is being advertised extensively. Larger spaces are being taken than ever used before for advertising a depilatory. But it is commonsense advertising. We do not make extravagant claims for our product. We do not lead the public to expect that they are getting something resembling a new face cream. We tell the plain facts that *Ashes & Roses* DEPILATORY is a Bourjois product; that it will do its work well and efficiently and is guaranteed to be harmless; and this is the class of advertising that builds steady and ever-increasing sales.

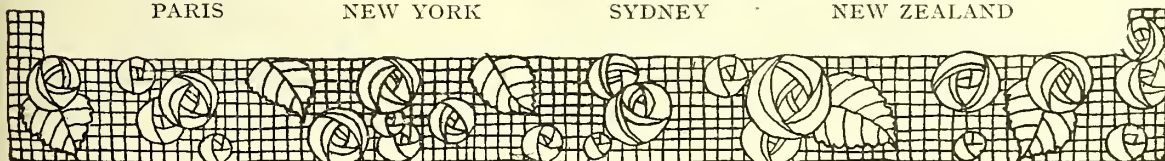
Ask our travellers to show you specimens of our advertising. You will be impressed with its dignity and general refinement. Please send in your order early for this new Bourjois success, packed in the attractive *Ashes & Roses* green and gold colour scheme.

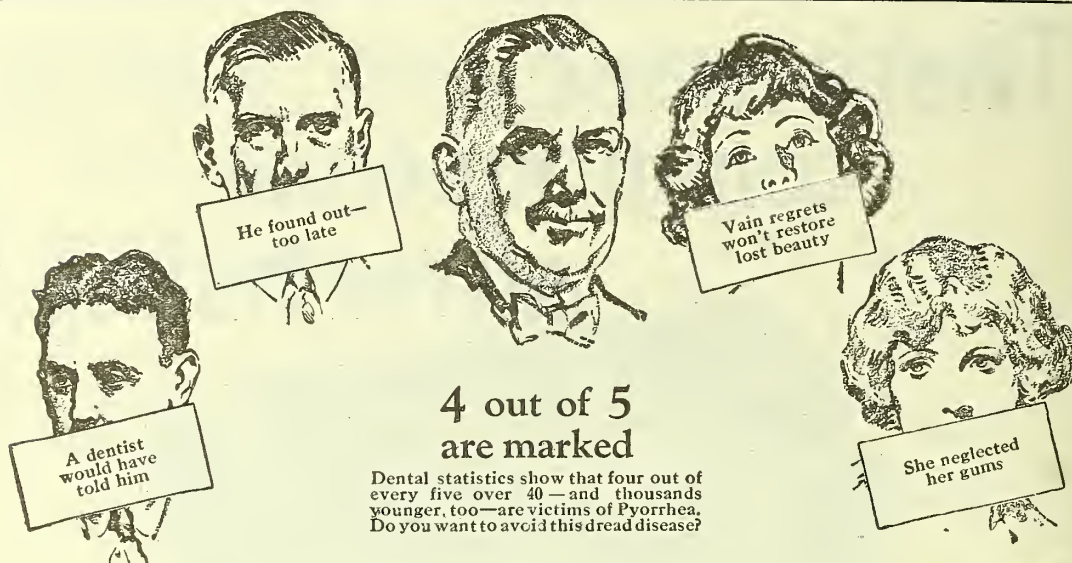
Price 28/- per dozen.

P.A.T.A. 3/6 per tube.

Ashes & Roses (BOURJOIS PARIS) DEPILATORY

A. BOURJOIS ET CIE. LTD., 4 WATER LANE, LONDON, E.C.4
PARIS NEW YORK SYDNEY NEW ZEALAND





4 out of 5 are — purchasers!

You know that 4 out of 5 over forty and thousands younger suffer from Pyorrhea.

Have you thought how this affects you?

It means that 4 out of 5 over forty and many younger of those served by your pharmacy are purchasers of Forhan's For the Gums from you—if you choose.

You only need an attractive Forhan's For the Gums showcard in your window to secure the sales.

For nothing but Forhan's For the Gums and their dentist can save these people from Pyorrhea.

And only the pharmacist sells Forhan's For the Gums.

People know this; they read it in our advertisements, week after week. . . .

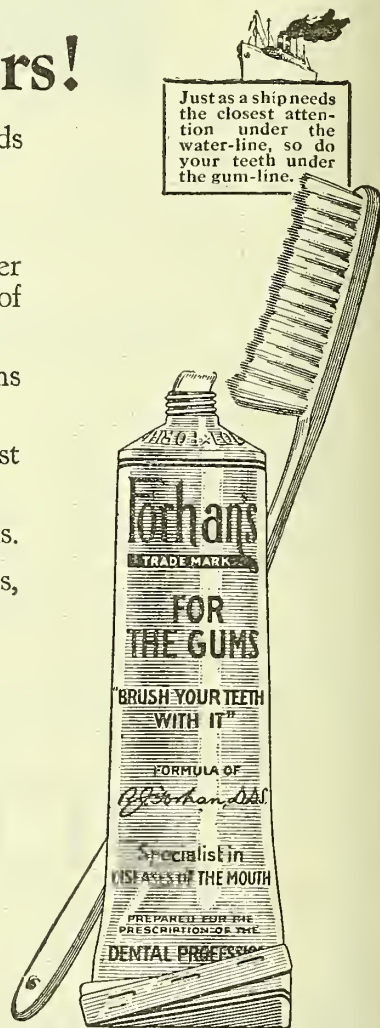
The showcards are free on request.

THOS. CHRISTY & CO.,
4-12 Old Swan Lane, London, E.C.4

Forhan's
FOR THE GUMS

More than a tooth paste—
it checks Pyorrhea

Just as a ship needs the closest attention under the water-line, so do your teeth under the gum-line.



JUNE 30TH

The Bonus last day!

**One Dozen
Swan Down
FREE**

**on every gross
ordered.**

MINIMUM 6 DOZEN.

Simply send a post-card to-day, stating amount of order, bonus in colours required.

Sign and write address plainly.

Also ask for display material, showcards, etc., advertising the 'Name-Sake' Scheme.

**This Bonus
offer closes
finally on
30th June**

N.B.—Keep the Name Coupons filled in by your customers, and dispatch *all together* at the end of the month. In the meantime, distribute leaflets *freely* among your customers.

THE last day of June is the last day of the Swan Down Bonus offer—but the Name-Sake Scheme is going on and going strong month by month!

This means to say that the demand for Swan Down Face Powder is likely to grow like a snowball during the next few months—but you have only till the end of June to stock up with the advantage of Bonus terms!

This is the point. You will have to place fresh orders sometime—the growing demand will see to that. Place the largest order you can *now*, and get the Bonus!

TETLOW'S



**SWAN
DOWN**

FACE POWDER

Quelch & Gambles, Ltd., 211-15 Blackfriars Rd., S.E. 1



It pays to push "Premier"

Other Vinolia Soaps

Baby, a pure emollient; Boracic and Cold Cream; Bath Rounds, 3 varieties; Otto, selected rose; Palm and Olive Oils

*The best soaps pay
because they please
the best customers*

VINOLIA PREMIER SOAP will appeal to your customers because of its refreshing fragrance, soothing cleansing power and economy in use.

So benefit by the extra sales that follow the recommendation of the best—the best sales are those that ensure repeat orders. Volume of profit is even more important than percentage.

Increased national advertising will send more customers to your shop for Premier. Remind them that you can supply by showing it. Feature the new display boxes for 36 toilet and 12 visitors' and bath tablets.



Vinolia

PREMIER SOAP

First for Fragrance—Premier for Purity

BUY ON BEST TERMS

Orders for £5 net, assorted if desired, secure 10% discount with 2½% for cash in 28 days

SEND FOR DETAILS OF SPECIAL OFFERS TO VINOLIA CO. LTD.
BLACKFRIARS, LONDON, E.C.4

PV 69-29

PROPHYLACTIC

In the Orange Carton.

"Fort Brand"

The
Brush
you can
rely on.

In 3 sizes

16/- doz.

15/6 "

11/6 "

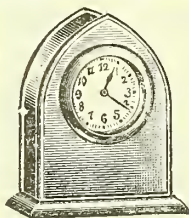
Hard, Medium & Soft and also
very Hard Unbleached.

Send your orders and enquiries to:

W. R. TILBURY & SON

47 Frampton Park Road, Hackney, LONDON, E.9

ENQUIRIES INVITED FOR "OWN BRAND" LINES



YOUR COMPETITORS are selling lots of CLOCKS & WATCHES

Why don't you?

Single Alarms ... 30/- doz.
Enamel Fronted Clocks, assorted
colours, as illustrated 36/- doz.

Largest variety ever offered in stock.
SEND FOR FULL LISTS.

We can also supply Genuine Gillette Blades, and all leading
makes of Safety Razors and Blades. Let us quote you. Our
prices are unbeatable. Terms: Nett Cash with Order or
goods sent against approved refs.

L. FRANKENBERG, 15 Stoney Lane, Houndsditch,
London, E.1. Phone: Avenue 1170.

"TAPON"

(Regd.)

Tie up your Parcels with Advertising Tying
Tape. Pleases both Eye and Pocket and gives
Distinction to every Parcel sent out.

Various Colours and Widths. Printed or Plain.

Write for particulars, when Prices
and Patterns will be forwarded.

S. D. SIMOND & CO., LTD.

10 Monument Street - - E.C.3

Tel.: Avenue 6378. Telegrams: "Duncasim London."

MEM DIAGONAL SAFETY RAZOR

Embodying several important
mechanical principles.

A few Leading Patterns;
D8 DIAGONAL retail 6/6
in Leather Box, 21 Blades.

D21 FOLDING 8/6
in Nickel Case, with 3 Blades.

D9 Ditto in Leather Case 10/6
DIAGONAL BLADES
pkt. 10 3/9

MEM DE LUXE
Gillette Patt. " 3/6

MEM EXTRA
Gillette Patt. " 2/3

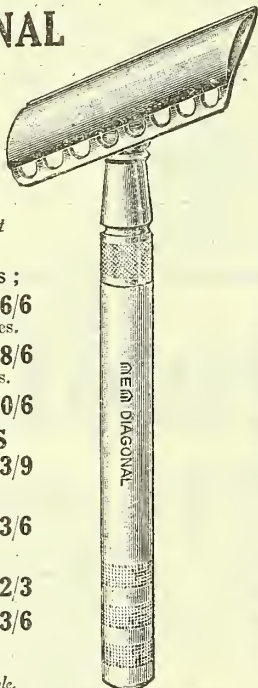
MEM Auto Strop Patt. " 3/6

33 1/3% OFF ABOVE.

Special Quotations for Wholesale.

HAROLD J. SIMON

Import and Export Merchant. Manufacturer of Fountain Pens
11 LITTLE BRITAIN, LONDON, E.C.1.



Brighter Windows Brighter Business

IS CERTAIN
WHEN USING KING'S
WINDOW DRESSING
PAPERS

From 1/3 per roll upwards.

Make sure you are Moving with
the Times.

Send without delay for King's
Sample Set No. 742 of Up-to-
Date Patterns.

NEW DESIGNS

for the Spring sent post
free and free of charge
for inspection upon
application.

J. KING & CO.

42-60 GOSWELL RD., LONDON, E.C.1.

SEASONABLE SUNDRIES—BATHING CAPS



No. 428



No. 1746

									s.	d.
No. 428.—	BATHING CAP,	helmet shape,	red rubber	...	...	...	...	per doz.	16	0
"	"	"	"	lined band	...	...	...	"	18	0
"	"	"	"	extra stout	...	...	...	"	21	0
" 1746.—	"	"	"	with chin strap	...	...	...	"	24	0
" 100.—	"	"	"	helmet shape, not pleated,	assorted colours	...	...	"	13	0
" 100R.—	"	"	"	reversible	"	...	...	"	14	6
" 1746A.—	Ladies' Diving Cap,	pleated, with chin strap	"	"	...	...	...	"	18	0
"	"	not pleated	"	"	...	...	...	"	16	0
" 1614.—	Gents' Water Polo Cap,	standard shape,	red rubber	...	...	...	...	"	20	0

CARRIAGE PAID ON ORDERS OF £3 AND UPWARDS:

A discount of 5% for prompt cash is allowed on all amounts of 10/- and upwards: Money returned if goods are not satisfactory. Write for New Price Lists of Druggists' Sundries, Toilet Requisites, Rubber Goods, Cut Sheet Rubber Appliances, etc.

BURGE, WARREN & RIDGLEY, LTD. 91 and 92 GREAT SAFFRON HILL, LONDON, E.C.1.

VACUUM FLASKS

Green and purple enamelled,
aluminium cup and shoulder.

1 pint size (reputed).

All guaranteed.

Taking an original case (250).

1/0 $\frac{1}{2}$ each

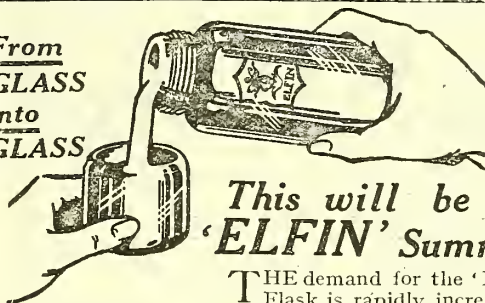
Case Free. Net Cash 7 days.

CARRIAGE PAID UP TO 100 MILES.
EX GOOLE DOCKS.

THOS. SWALES

22/24 BUTTS COURT, LEEDS.

From
GLASS
into
GLASS



This will be a
'ELFIN' Summer

THE demand for the 'Elfín' Flask is rapidly increasing, and the reason is that the 'practically all-glass' construction of the 'Elfín' Flask with its glass drinking cup, tarnish proof casing and heat retaining powers have been accepted by the Public as being a distinct advance over the old metal protected flask. YOU will find the

*Cricket
Tennis
On River
Cycling
Holidays*

'ELFIN'
VACUUM FLASK

a quick and profitable seller. Supplied in cases of 100 and sample cases of 12 and 24. Write for Trade terms and get your supplies in now.

Central Depot, "C,"

THE ELFIN FLASKS
25 Finsbury St., London, E.C.2

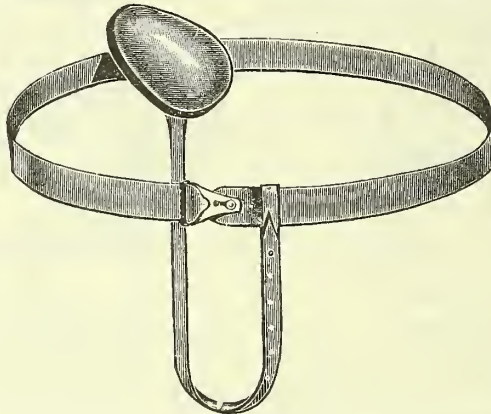
Retails at

4/6

THE SIMPLIC (REGD.) ALL RUBBER TRUSS

SIMPLIC
SURGICAL
SERVICE

Supplied with
INGUINAL,
SCROTAL or
CIRCULAR PADS
Single or Double.



SIMPLE
SELF-ADJUSTING
SECURE

OBTAINABLE
THROUGH
ALL USUAL
SUPPLY HOUSES.

THIS APPLIANCE embodies all the essentials so long sought after. It is EXTREMELY STRONG, INSTANTLY ADJUSTED to any size, and maintains an ADEQUATE PRESSURE under all conditions. The SIMPLIC TRUSS is specially designed for BATHING, being entirely rustless and unaffected by water. Specially prepared to suit all climates, it is the LAST WORD IN COMFORT.

Buy *SIMPLIC Branded Goods*—TEATS, SOOTHERS, GLOVES, Etc.

Estd.

1850

BERTONS

of Old Street

have made and marketed

Dr. White's
Sanitary Towels
(Registered)

for 40 odd years. If you do not stock them you are missing the best line of its kind.

Free Samples: Free Protectors:
Free Showcards.

Full particulars and terms willingly furnished.
SEND US A LINE NOW.

ARTHUR BERTON, LTD.

Factory, Warehouses and Offices:
Britannia House, Old St., London, E.C.2
And at Manchester and Glasgow.

IF IT'S TRUSSES YOU WANT?

THEN TELL YOUR SUNDRY
HOUSE THEY MUST BE—

ELLIS SON & PARAMORE'S SHEFFIELD

IF THEY ASK WHY — SAY
THEY ARE THE BEST ON
THE MARKET, AND HAVE
BEEN FOR 125 YEARS.

TONIC FACE-CLOTH

The secret of a lovely complexion. By tonic action makes the skin as soft and sweet as a babe's. Prevents wrinkles. Never gets "slimy." Never loses its virtue. Ensures skin health. In sealed envelopes 1s. (bath size 1s. 6d.). Introduced by the makers of

NORVIC CRÈPE BANDAGES

the universal preventive and remedy for varicose veins. Rubberless, hygienic, cheap and clinging. Stock "flesh colour," practically invisible under silk stockings. In 2, 2½, 3, 3½, and 4 inch widths.

GROUT & CO., Ltd.

Great Yarmouth.

Stocked by all leading Wholesalers.



PERKEN, SON & CO., LTD.

Established 1852.

Contractors to H.M.
Government.

THE "MATER" CLINICAL

is on the
P.A.T.A.
LIST.

ALL
TYPES
OF
CLINICAL
AND OTHER
THERMOMETERS

Price List on Application.

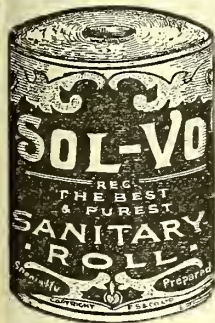
94 HATTON GARDEN,
LONDON, E.C.1.

Telephone: 724 Holborn.

Telegrams: "Optimus, Smith, London."



SOL-VO SANITARY ROLLS & PACKETS.

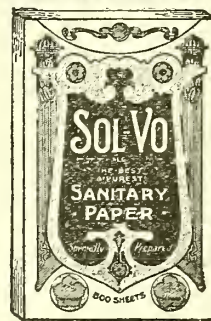


SOL-VO

REGD

THE BEST & PUREST

SANITARY PAPER



	per doz.
Three dozen Rolls ...	7/- net.
Half gross ,, ...	6/6 "
One gross ,, ...	6/- "
Five gross ,, ...	5/3 "

CARRIAGE PAID.

	per doz.
Three dozen Packets ...	10/- net.
Half gross ,, ...	9/6 "
One gross ,, ...	9/- "
Five gross ,, ...	8/3 "

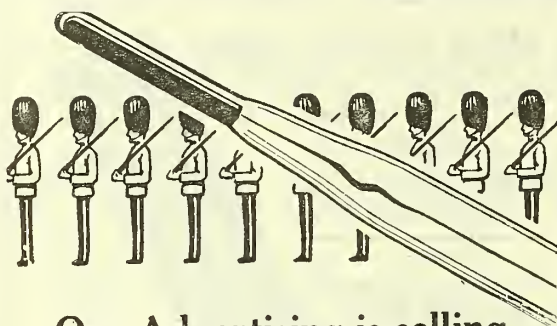
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FORD, SHAPLAND & CO. Ltd.

LABELS & SHOWCARDS — PRINTERS — CARTONS & ENVELOPES,
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Our Advertising is selling
the new "Clinical"—
"The Sentinel"
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DON'T MISS SALES
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We often take back used
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date machines. These
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**Thoroughly Overhauled
and Rebuilt**

are sold under the
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Write for details of "Nationals" available to—

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UPRIGHT CENTRE CASES, WALL CASES,
GLASS COUNTERS, MIRRORS
WINDOW FITTINGS, GLASS SHELVES,
SHOW STANDS, DRAWERS, DESKS
CHECK TILLS, &c. Immense Stock.
NEW and SECOND-HAND.

Ready for Immediate Delivery. For Sale or Hire.

FREDERICK MAUND
175/9 Old St., LONDON, E.C.1.

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regarding any type of business motor vehicle and its cost of
running and maintenance, you should read

**MOTOR
TRANSPORT**

GOODS AND ☐
PASSENGER CARRYING ☐
BY ROAD. ☐

Every Saturday. 3d.

Write for
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Specimen Copy

Careful perusal of the Journal each week
will enable you TO SAVE MONEY on
the transport and delivery of goods.
Advice given GRATIS to readers.

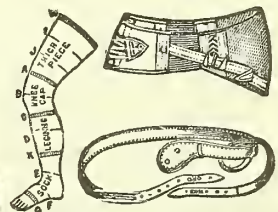
ILIFFE & SONS, LTD., Dorset House, Tudor Street, London, E.C.4

J. H. HAYWOOD, Ltd. CASTLE GATE NOTTINGHAM

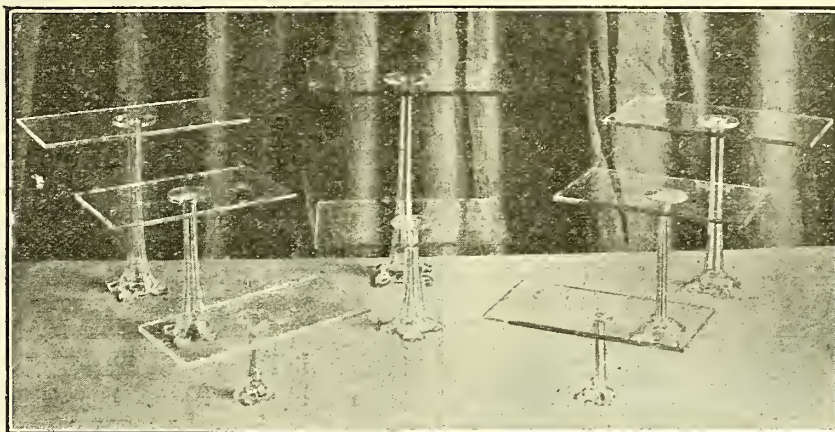
SURGICAL APPLIANCE MANUFACTURERS.

SPECIALITIES FOR SUMMER:

Elastic Hosiery, with or without Seams, suitable for Summer wear.
Trusses, Suspenders, Ladies' & Gents' Belts made from porous materials.
Elastic and Leather Wristlets, Arm-pieces and Elbow Supports, for Cricket,
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Goods for Toilet and Seaside trade, Washing Gloves, Bathing Caps, Water-
Wings, &c.
India-Rubber Appliances and Druggists' Sundries.

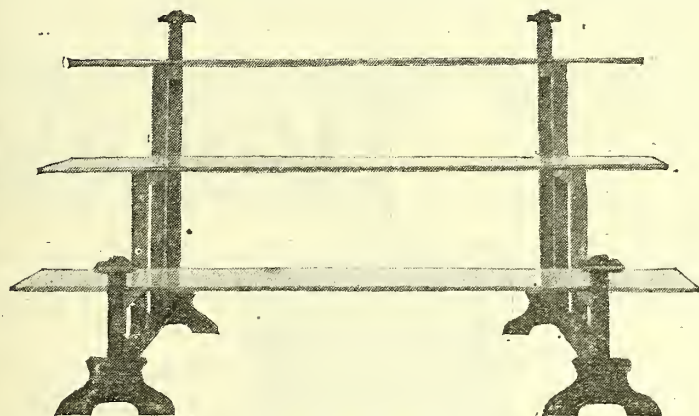


GOODS WELL DISPLAYED ARE HALF SOLD



No. CD 2201.

This All Glass Unit comprises :—2 each 4", 8" and 10", 1 each 6" and 12" Glass Pedestals; 2 each 10"×5", 10"×6" and 10"×7" Plate Glass Shelves; 1 each 12"×6" and 12"×8" Plate Glass Shelves .. 24/6



No. CD 2251.

Solid Oak Stand, complete with 3 Plate Glass Shelves, two 34"×7" and one 34"×6", 22" high×22" deep 37/6 each



Approx.
Heights.

4"	..	7/6 doz.
6"	..	10/6 "
8"	..	15/- "
10"	..	22/6 "
12"	..	28/6 "
14"	..	35/- "
16"	..	45/- "
18"	..	51/- "
20"	..	55/- "

No.
CD 705.

Glass
Pedestal.

Write for Illustrated Catalogue C.9 to Display Fittings Dept., 32-34 Old Street, London, E.C.1.

HASKINS

ISSUED BY SAMUEL HASKINS & BROS. LTD

DISPLAY DEPT.,
32-34 OLD STREET, LONDON, E.C.1
(Close to Goswell Road),
Phone: Clerkenwell 3405-6.

A large quantity of Plate glass shelves of all sizes in stock at greatly reduced prices, and other Display Fittings suitable for Chemists, Druggists & kindred trades.

Orders of £2 and over carriage paid in London area; £10 and upwards carriage paid to any station in Great Britain.



Health-builders for infants Profit-makers for pharmacists

Humanised Trufood until the ninth month. Trufood Full Cream from the ninth month until the early months of childhood.

The Trufood feeding programme is best for the infant, and spreads regular profits over a longer term than is usual with other baby foods. It is, consequently, the best trade proposition for the pharmacist.

The preference for Trufood is growing steadily, strongly. Experts in child feeding are busy propagating the Trufood selling story among mothers, doctors, and nurses.

Trufood sales promotion is therefore a pharmacist's aid to larger profits. We have a special Sales Promotion Department that will gladly co-operate with you in Trufood sales enterprises.

Are you exhibiting a Trufood photo showcard? If not, please write for one.

Humanised Trufood is obtainable only from pharmacists, in 10-oz. tins at 2s 9d, and 20-oz. tins at 4s 9d; Trufood Full Cream in 10, 20, and 36-oz. tins, at 2s, 4s, and 7s. No other channel of supply is open to the public.

There are two stages of infant feeding: First stage, birth to nine months, breast milk or Humanised Trufood; second stage, nine months and onwards, Trufood Full Cream.

Recommend Trufood Full Cream also for invalids and nursing mothers.

TRUFOOD

TRUFOOD LIMITED,

THE CREAMERIES, WRENBURY, CHESHIRE

TF 126-130

ALL CHEMISTS SHOULD SELL EIFFEL TOWER LEMONADE

PRICE PROTECTED—IT'S ON THE G.P.A.A. LIST

SHOWN IN WINDOW—IT SELLS ON SIGHT!

TRADE TERMS	Bots. 6 ¹ / ₂ d.	Gross. 62/-	Tins. 8 ¹ / ₂ d.	Doz. 6/9	Tins. 1/3	Doz. 12/-
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Write for Price List (on Trade memo.)
showing cash and quantity discounts to

FOSTER CLARK LTD. (Dept. D.) MAIDSTONE.

A GOOD PROFIT ENSURED.

RASPBERRY VINEGAR.

THE PUREST MADE.

In Fancy White Glass Bottles, 3 oz.,
10 oz. & 20 oz. Imperial Measure.

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GRIMBLE & CO., LTD.

CUMBERLAND MARKET - - - N.W.1.



LOSALL'S SALT

Sells freely and readily
**PROFIT 50%
ON OUTLAY**

An infallible remedy for
**GOUT,
RHEUMATISM,
ECZEMA
and SKIN
AFFECTIONS.**

P.A.T.A.

4 oz. tins 1/-, 8/- doz. net.
8 oz. " 1/9, 14/- " "
Bottles 2/6, 20/- " "

Attractive advertising matter
supplied on application.

SOLD EVERYWHERE.

Manufactured by
**LOFTHOUSE & SALTNER LTD.
HULL**

Increase your turnover and add to your profits

HERE'S a line that opens up a new line of trade, not just a substitute for an old one—Welch's Grape Juice, pure, delicious, palatable and quite economical. Just the unfermented juice of fresh, ripe grapes—non-alcoholic, no licence required, bringing health and refreshment to adults and children alike. It is appetising and most nutritious. A glass at breakfast, at luncheon or at dinner has a most beneficial effect upon the digestive system. Sells at 2/- a pint and shows you 25% clear profit even on orders for one case. Let us send you details of the complete display material which is available.

Sole Distributors:

FASSETT & JOHNSON, LTD.
86 CLERKENWELL ROAD, LONDON, E.C.1.

Welch's GRAPE JUICE

Free from preservatives and colouring matter.



WE WELCOME YOUR ENQUIRIES

FOR

EFFERVESCENT SALINE (granular or fine powder) in bulk or packed in decorated tins, and bottles with various artistic wrappers.

CITRATE OF MAGNESIA Bulk, or packed in Kali bottles. Choice of various labels.

SEIDLITZ POWDERS Guaranteed hand weighed, and made from Howard's Seidlitz only.

PRO-SPA-QUA (EFFERVESCENT) **CARLSBAD POWDER**
Contains no sugar. The speciality to push for gout, rheumatism, etc. Bold packing.

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(REGD.)

MENTHOL AND
LIQUORICE,

FOR

VOICE AND
THROAT



Don't be Out
of Stock of the
SMARTEST AND
BEST SELLING
LINE.

Gross Quantities 45/-
Smaller „ 48/-
(less 2½% month)
CARRIAGE PAID.

Special Terms
to Wholesale
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Samples mailed on receipt of post card.

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Manufacturing Chemists,
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Per Tin

6^{d.}

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POPULAR

PRICE

THE BEST HOUSE FOR ASPIRIN CASCARA AND ALL TABLETS IN BULK.

Write for samples and prices before buying.
Superior machinery and scientific control.

R. GIBBINS & CO.

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DR. BENGUE'S BALSAM

RHEUMATISM, NEURALGIA, GOUT.

PULMO (BAILLY).—Dr. BENGUE'S DRACÉES,
FORXOL.—HEMOSTYL.—EUPURGO.

Dr. BENGUE'S ETHYLCHLORIDE.

RICARD-CACHETS (Free sample on application).

ANESTILE.

NARCOTILE.

EUPHORIAN AMPOULES (Entero-Antigens)

WRITE FOR Dr. BENGUE & CO., MFG. CHEMISTS,
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It will pay you to stock them!

When the public demand goods bearing a specified name the wide-awake retailer prepares to meet that demand and so reap the benefits which follow.

IGLODINE is fast becoming a household word, and the public, through satisfaction which comes after trial, are demanding IGLODINE PREPARATIONS. Are you the retailer who is preparing to meet the demand?

Iglodine.

Write to-day for full particulars to:

THE IGLODINE CO., LTD. - Newcastle-on-Tyne.

NURSE HARVEY'S MIXTURE

A safe, simple and reliable remedy for Children's Ailments is advertised so extensively in the daily and weekly Press as to bring mothers to the retailer without effort on his part.

The selling has been done before the mother reaches the chemist, and, having supplied her, it is only common sense to claim she will buy other family necessities from him. Moreover, the continuous demand for it produces a quick turnover.

For Direct Terms apply to—

OSCAR SCRUTON & CO., YORK

AN IMPORTANT INNOVATION

BEECHAM'S PILLS and the P.A.T.A.

ON AND AFTER JULY 1st the selling prices of Beecham's Pills will be protected under the regulations of the Proprietary Articles Trade Association, and from that date Beecham's Pills must not be retailed below the face values of **1/3** and **3/-**

HOME PRICE LIST.

BEECHAM'S PILLS :

1s. 3d. size	11s. 9d. per dozen
3s. 0d. size	28s. 0d. per dozen
5s. 0d. size	54s. 0d. per dozen

BEECHAM'S COUGH PILLS :

1s. 3d. size	11s. 9d. per dozen
3s. 0d. size	28s. 0d. per dozen

Less **2½%** Cash Discount.

A further **5%** allowed for WINDOW or other ADVERTISING DISPLAY.

Orders—Minimum Quantity £5-0-0 value (assorted sizes)

PACKAGES FREE. CARRIAGE PAID.

TERMS:—CASH WITH ORDER.

If advantage is taken of the above Cash Discount and Advertisement Allowance, the Retailer's profit on selling at face value will be :

1s. 3d. size	....	....	....	27½%	3s. 0d. size	....	....	....	28%
ON SELLING PRICES.									

*Cheques to be made payable to THOMAS BEECHAM, and crossed
"Westminster Bank, Ltd., St. Helens."*

BREAKING BULK—In view of the large sale of Beecham's pills in small quantities (four a penny), it should be noted that in future the pills contained in all **5/-** boxes will be put up in 78 paper screws, each containing four pills. They will be wrapped in this form to ensure the pills reaching the consumer in a perfectly hygienic condition. When Beecham's Pills are sold in this manner, they return a profit to the Retailer of **36%** on the selling price.

THOMAS BEECHAM

(Proprietors : Beecham Estates & Pills, Limited),

ST. HELENS, Lancs.

Petroleum Jelly

White, Yellow, Amber,
& Ruby Red, for all
Pharmaceutical and
Veterinary purposes

MEADE-KING, ROBINSON & CO., LTD.

Liverpool - London - Manchester - Birmingham - Leeds

PARAFFINIUM LIQUIDUM B.P.

HALF-WHITE OILS,
TRANSFORMER OILS

TECHNICAL WHITE OILS

PETROLEUM JELLIES SNOW WHITE BP AND NATURAL WHITE BP

Pure Russian White Oils

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**THE STANDARD
OF PURITY
STERNS
LIQUID**

PARAFFIN B.P.

Colourless, Tasteless, Odourless.
All Specific Gravities.

**PETROLEUM
JELLIES B.P.**

White, Lemon, Yellow, Amber,
Red, Green.

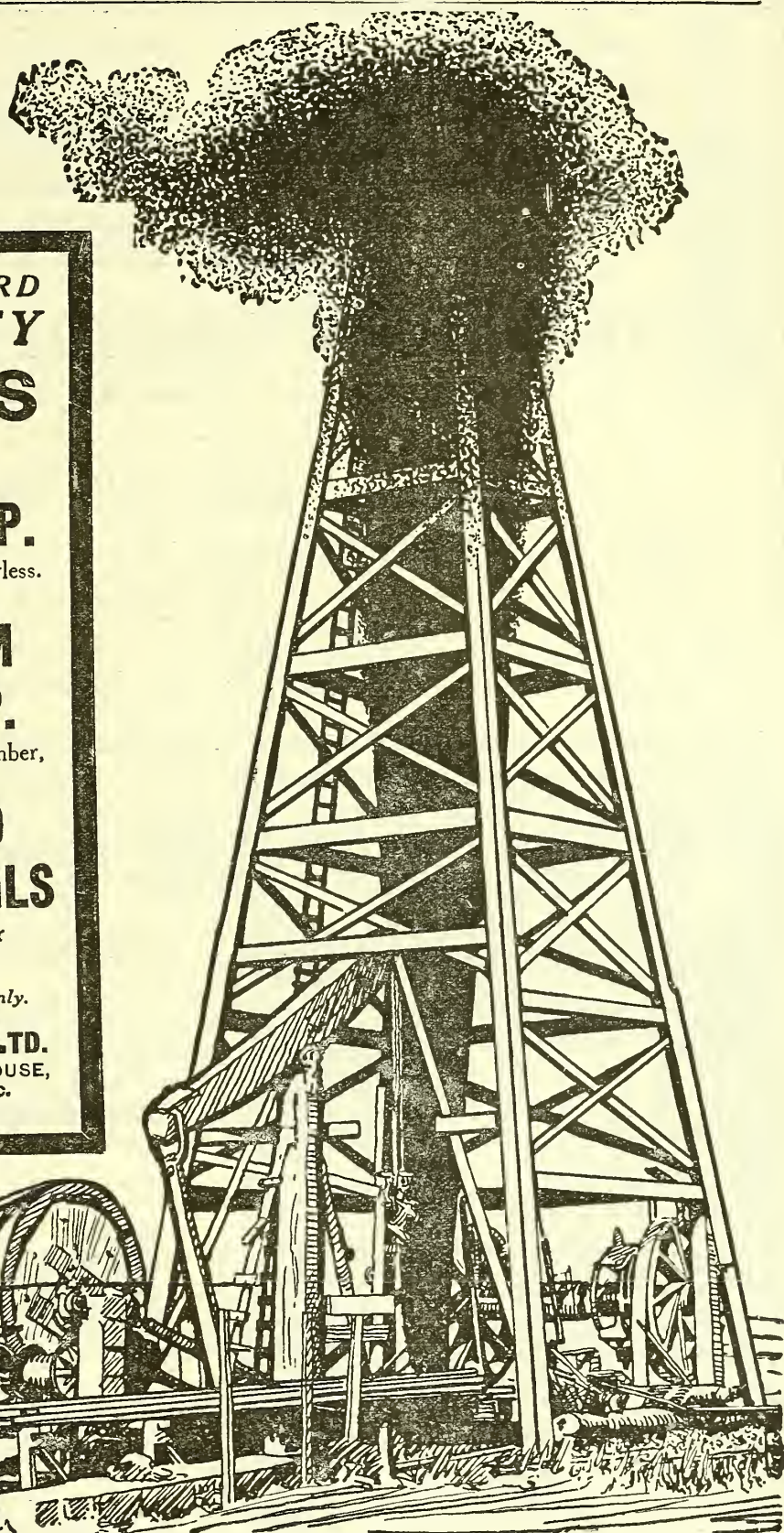
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Yellow, Green, Red for
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Wholesale and Export only.

STERNS LTD.

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S.G. 890/5. Guaranteed to remain bright at 0°C.

White and Half White Oils
B.P. White and Yellow Petroleum Jellies

QUOTATIONS & SAMPLES will be sent on application.

PETROLEUM JELLY
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 BRAND

THE PERFECTION OF PETROLEUM JELLY.
 MANUFACTURED SOLELY BY

THE DEE OIL CO. LD.

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**PACKED IN BARRELS, KEGS OR
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OLEUM DEELINÆ (DEE OIL)
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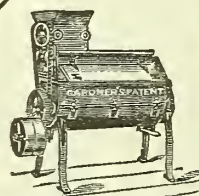


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probably could have been traced by a Gledhill Till. The Gledhill loses nothing. It accounts for every penny received, prevents leakage, and safeguards both you and your assistants. Also, it is British made to last a lifetime.

Send for catalogue, instalment plan and money-back offer.

G.H. GLEDHILL AND SONS LIMITED
 13 TRINITY WORKS, HALIFAX.



GARDNER'S PATENT "RAPID" SIFTERS & MIXERS

are used for Blending all Kinds of Dry Powders.

Our reputation for making high grade machinery and a determination to maintain it is ample assurance that our

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Also Ball Mills, Disintegrators, Iron or Granite Edge and End Runners, Millstones and Mills, Drum Sieves, Drying Machinery, etc. *Send for our Catalogue.*

Wm. Gardner & Sons (Gloucester) Ltd. Engineers, Gloucester.

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REGISTERED TRADE MARK

Russian Medicinal Paraffin

*Recommended by the most eminent
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Intestinal Stasis (Chronic Constipation).*

OBTAINABLE AT ALL CHEMISTS
AND STORES IN 10-OZ. AND 20-OZ.
PANEL BOTTLES.

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Liquid Paraffin Specialists,
FOREST LANE, STRATFORD, E.15

WE SPECIALISE IN



OLIVE OIL

*For Medicinal purposes
you MUST have*

**The FINEST the
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WE HAVE IT

BEING SOLE AGENTS FOR

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CASTEL & FILS NICE
FERD. RIENGO MALAGA

Write for samples and prices of bottles, cans, and casks to

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NORTH ROAD - LONDON, N.7

ADEPS LANÆ, P.B.

THE FINEST BRITISH LANOLINE PRODUCED

IS MANUFACTURED BY

THE PHARMACEUTICAL LANOLINE CO.

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WHO INVITE ENQUIRIES. Telegrams: "Batapo, Walgreen, London."

THE METHYLATING CO., LTD.

for METHYLATED SPIRIT.

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The PERFUME XMAS TRADE

The above illustrations show a few of the Bottles that will help sales. We can also supply EAU DE COLOGNES—globe shape, wickered, plain or coloured.

PLACE YOUR ENQUIRIES—NOW

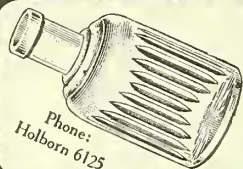
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JULES LANG & SON

The Glass Specialists
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Codes:
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1906, and Bentley's
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GLASS BOTTLES

of every description for
all purposes.

ENQUIRIES SOLICITED.

VAN DER HOEKS

321/25 Bank Chambers
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Telegrams
Clashhook.

ESTABLISHED 1772

HENRY'S CALCINED MAGNESIA

Continues to be prepared with scrupulous care, in the greatest chemical purity, by

Messrs. THOMAS & WILLIAM HENRY, 11, East Street, St. Peters, Manchester.

And is sold in Bottles, authenticated by a stamp bearing their name.

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Price 2s 9d

Trade Mark, "Henry's Calcined Magnesia."

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Phone:
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Enquiries and orders for
ALL KINDS OF

GLASS BOTTLES

will receive immediate attention.

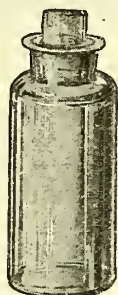
Registered Trade

W

Mark, No. 26866.



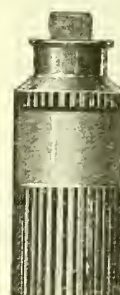
Hand-turned Shop Rounds.



Recessed Shop Rounds.



Recessed Poison Rounds.



SHOP BOTTLES

of the finest finish. Perfect Stopping. Made in glass free from arsenic and lead; this feature is of vital importance in the case of Shop Bottles.



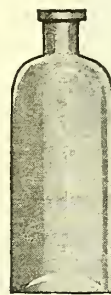
R.C. Flat.



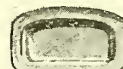
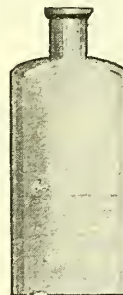
B.C. Flat.

DISPENSING BOTTLES—

accurate in Capacity, free from arsenic and lead, and handsome in appearance. The aristocrats of bottles.



Oval.



Oval Frontal Flat.



B.C. Square.



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DOUBLE-ENDED FEEDERS

The finest the world has yet seen. Made in beautiful lustrous white flint glass which is so durable that it may be boiled continuously for twenty-four hours without shewing signs of deterioration.



Oval, 2 Flat Sides.

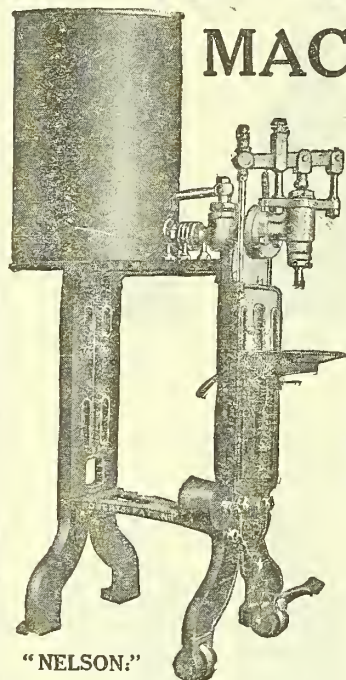


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Sold by all the Leading Wholesale Houses.

WOOD BROTHERS GLASS CO., LTD.
BARNSELEY, (Established 1828) **ENGLAND**

ROBERTS' ORIGINAL PATENT BOTTLE-FILLING MACHINES



Don't waste money
on imitations, buy
Roberts' Machines
which actually
Created the Records
for

**CLEANLINESS
SIMPLICITY**
and Rapidity in
Bottle Filling.

*Write for new
Price Lists.*

NOTE the Address :
**ROBERTS' PATENT
FILLING MACHINE CO.**
33 ROUNDCROFT ST.
BOLTON.

Our latest patent
"Alpha," price £12,
will fill 10 gross bottles
per hour.

*Write for Particulars.
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"NELSON."

A PHILIP JOSEPHS & SONS LTD.

SHOWCASE QUICKLY EARNS ITS COST.

Try One!

93 OLD ST., LONDON, E.C.1.

Phone—2191 Clerkenwell.

Wires—"Josiphiah London."

Another DRUMMER display-help

The **DRUMMER ORPHEANS** band will broadcast
a profit-bringing message from your window. Beautifully
printed, built of stout cardboard, easy to fix, makes most
effective display in narrow space. Put a pile of Drummer
Dyes on the Bandstand.



EDGE'S

MADE BY EDGE'S - BOLTON

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**PIONEERS OF THE
CARRIER INDUSTRY
OVER 50 YEARS
EXPERIENCE**

**THE FAMOUS
"JAMES"
FINEST ENGLISH MANUFACTURE**

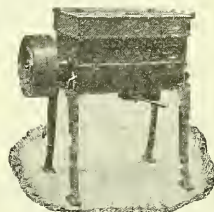
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TRICYCLE & MOTOR
BOX CARRIERS FOR
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**THE SMARTEST & CHEAPEST DELIVERY SERVICE
CONTRACTORS TO THE G.P.O. & BRITISH RAILWAYS
WRITE AT ONCE FOR NEW ILLUSTRATED CATALOGUE TO THE
JAMES CYCLE CO. LTD. BIRMINGHAM.**

**ALL MODELS ON VIEW AT OUR LONDON SHOWROOMS
22, HOLBORN VIADUCT E.C.1. AGENTS GIVE IMMEDIATE DELIVERY**

"ATLAS" PATENT MIXERS & SIFTERS

Combined or Separate Machines, for Hand or Power.



UNEQUALLED FOR
EFFICIENCY AND
DURABILITY.

BALL MILLS
GRINDERS .
DRYERS

HIND & LUND, LIMITED,
ATLAS WORKS, PRESTON.

Established 1791.

(1)



The Flyband
THAT CATCHES CUSTOM

The Wasp Flyband is the most effective fly trap on the market. Clean to handle and perfectly hygienic, it sells itself rapidly, giving a quick turnover and handsome profits. The Wasp Flyband never "sticks" in stock, but sells as soon as it's shown.

The WASP FLY BAND

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Sole Manufacturers—
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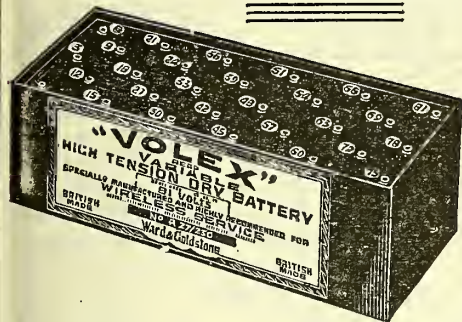
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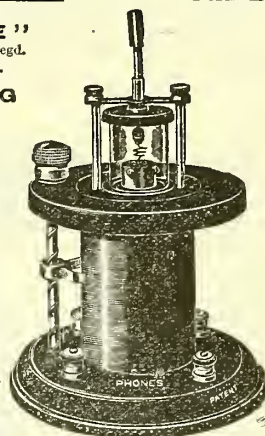
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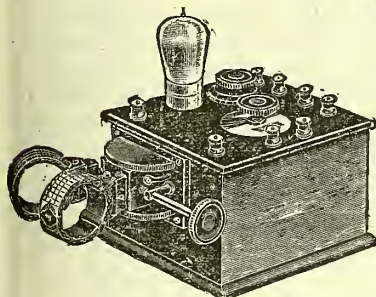
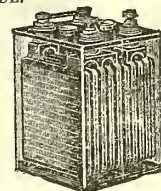


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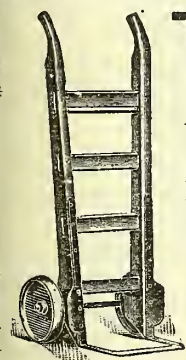
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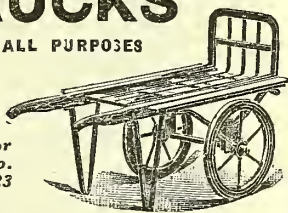
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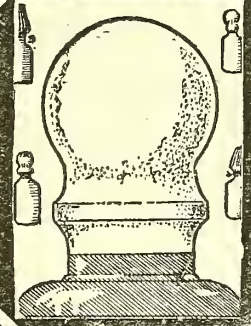
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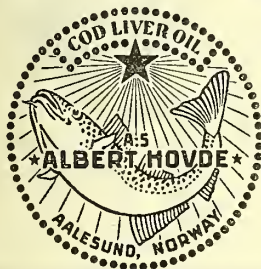
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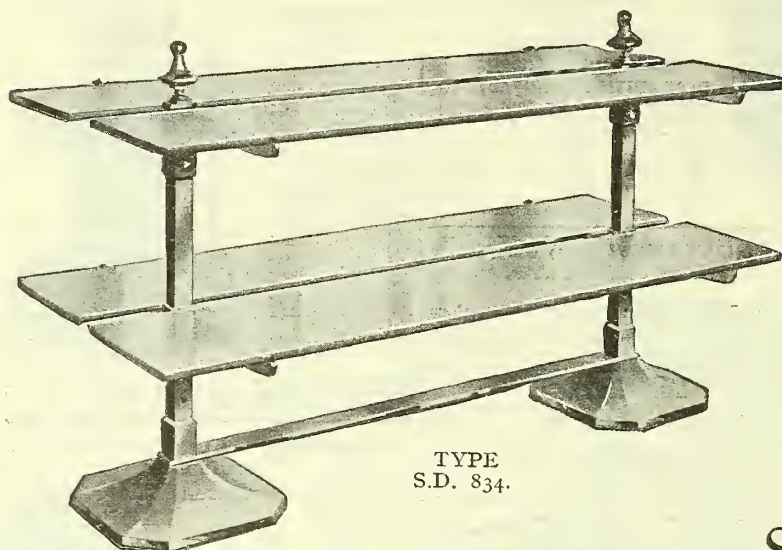
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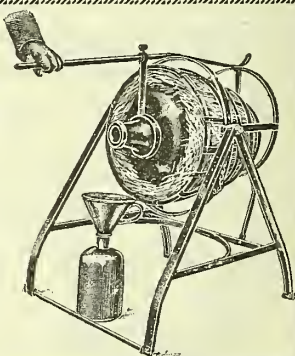
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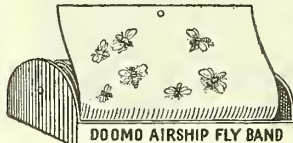
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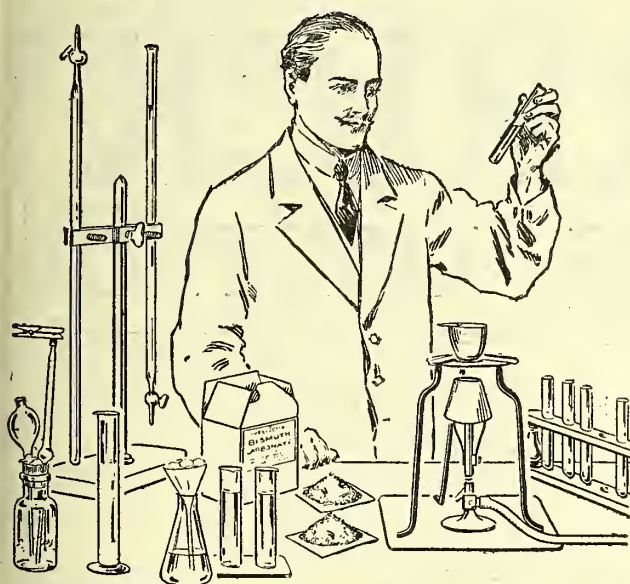
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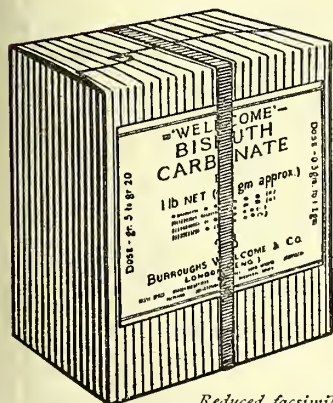
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Coming Events

This section is reserved for advance notices of meetings or other events. These should be received by Wednesday of the week before the meetings, etc., occur.

Wednesday, June 24

Liverpool Chemists' Association and Branch of the Pharmaceutical Society.—Annual picnic. Motor coaches will leave Woodside Ferry, Birkenhead, at 2 p.m., and proceed to Hawarden, Mold, and Loggerheads. Tickets (10s. 6d. each) from the secretary (Mr. F. Wokes).

Cardiff Pharmacists' Association, Calhays Park, at 2.15 p.m. Annual outing. Charabanc tour of the Wye Valley. Tea provided at Tintern. Tickets (9s. 6d., including tea) from Mr. W. Gwynne Wigley, 133 Clifton Street.

Thursday, June 25

Pharmaceutical Society of Great Britain (Bath Branch).—The Abbey Church, at 1.15 p.m. Outing to Fonthill Park, Wilt. Tickets (8s. 6d. each) from the hon. secretaries, Bath Pharmacy College.

MANCHESTER PHARMACEUTICAL ASSOCIATION.—The annual picnic will take place on July 1 to Beeston Castle at 1.30 p.m. from Albert Square. Tickets (11s. 6d. each) from the secretaries. (Members travelling in private cars 6s. 6d.) Apply for tickets by June 24.

English and Welsh News

The Editor will be obliged if subscribers will send him marked copies of newspapers containing items of interest for insertion in this or other news sections.

Dangerous Drugs Acts, 1920 and 1923

(From "The London Gazette," June 16, 1925)

WITHDRAWAL OF AUTHORISATION (WILLIAM WALTER BANBURY)

Whereas William Walter Banbury, of 73 Newington Butts, London, being a person duly registered under the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908, has been convicted of an offence against the Dangerous Drugs Acts:

And whereas the said William Walter Banbury cannot, in my opinion, properly be allowed to be in possession of or supply raw opium nor to carry on the business of manufacturing, selling or distributing any of the drugs to which Part III of the Dangerous Drugs Act, 1920, applies:

Now, therefore, after consultation with the Council of the Pharmaceutical Society of Great Britain, and in pursuance of the powers conferred on me by No. 6 of the Raw Opium Regulations, 1921, and No. 10 of the Dangerous Drugs Regulations, 1921, I hereby give notice that I withdraw, as from to-day's date, from the said William Walter Banbury the authorisations granted by the said Regulations to persons who lawfully keep open shop for the retailing of poisons in accordance with the provisions of the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908, to be in possession of and supply raw opium and to carry on the business of manufacturing, selling or distributing the drugs to which Part III of the Dangerous Drugs Act, 1920, applies.

W. JOYNSON-HICKS,
One of His Majesty's Principal
Secretaries of State.

Whitehall, June 16, 1925.

Contracts

The following tenders have been accepted by the bodies named:—

Blean Guardians.—The British Drug Houses, Ltd., drugs; B. Pratt & Co., dressings.

Ellesmere Port Cottage Hospital.—Mr. H. W. Wallis, chemist and druggist, drugs, etc.

Birmingham

A picnic at Rednal, including bowls, cricket, golf and tennis, has been arranged for members of the local association on July 1. Tickets (3s. 6d. each) and other particulars may be obtained from Mr. F. Smith, Ph.C., 221 Soho Road.

The quarterly report of the city analyst (Mr. J. F. Liversedge, F.I.C., Ph.C.) states that one vendor of Gregory's powder containing about 30 per cent. of magnesium carbonate was cautioned. Among the samples of almond oil, one consisted of peach kernel oil, although labelled "almond oil."

Bradford

The syllabus for the winter session of the Bradford Branch of the Pharmaceutical Society is practically complete.

Mr. W. H. Fysh, 629 Leeds Road, is the new secretary of the Bradford Branch of the Retail Pharmacists' Union, in succession to Mr. A. T. Bailes.

Among the shops involved in a disastrous fire in Otley Road, recently, was a branch of Boots, Ltd. The damage in this case, however, was not of a serious nature.

Leeds

Mr. John D. Charnock, chemist and druggist, has purchased the business of Mr. H. Stevenson, 43 Oldfield Lane.

The athletic association in connection with Taylors' Drug Co., Ltd., has recently opened a sports ground of five and a half acres.

Liverpool

Mr. G. R. Tharratt, Myrtle Street, has acquired premises in Fenwick Street for a branch.

The American medical men were given a good send-off. They testified to the efficiency of surgery and dispensing in the Liverpool district.

Eighteen members of the Pharmacy Club joined in the North Wales circular tour and picnic on June 7. They were met by Mr. O. A. Phillips, who had motor-cycled from Colwyn Bay, where he was week-ending.

A party of seventy students of the Manchester School of Pharmacy recently visited the laboratories and warehouses of Evans Sons Lescher & Webb, Ltd., at Liverpool. All the students were greatly impressed by the care which is taken to ensure the quality of all the products of the company. Opportunity was afforded for the observation of processes of manufacture on a very large scale; and the up-to-date machinery, much of it of recent introduction, called for appreciative comment. The party was afterwards entertained to tea by Messrs. Evans Lescher. Mr. H. Brindle, B.Sc., A.I.C. (principal of the School), and Messrs. Iddon, Blore, and Miss Fox (students) expressed the thanks of the party; Messrs. Sendall and Brinson (directors of the company) replied.

Sheffield

Mr. Leslie Piper, Highfield, has had the windows of his pharmacy refitted and equipped with a modern system of lighting.

Mr. H. B. Hammond, President of the Sheffield Pharmaceutical and Chemical Society and secretary of the local branch of the Pharmaceutical Society, will shortly open a business at Firth Park. Mr. Hammond has been connected with the late Mr. Squire's business in the Haymarket for seventeen years.

Miscellaneous

YADIL SALE.—The formulas for Yadil products, goodwill of Clement & Johnson, Ltd., and registered British and foreign trade-marks were sold for £320 at auction on June 15.

CRICKET.—In a match played at Crouch End, in the Wholesale Druggists' Cricket Championship, on June 6, a team representing The British Drug Houses, Ltd., defeated an eleven from May & Baker, Ltd., by thirty-six runs, the scores being: B.D.H., 77; M. & B., 41.

INQUEST.—At the adjourned inquest, on June 17, on the body of Mr. W. R. Andrew, essential oil merchant, residing at Netherhall Gardens, N.W. (C. & D., May 23, p. 735), Mr. John Webster, Home Office analyst, deposed that the deceased must have taken 160 gr. of veronal. The inquiry was again adjourned.

DYESTUFFS INDUSTRY DEVELOPMENT COMMITTEE.—Dr. E. F. Armstrong, F.R.S., D.Sc., J.P., of the British Dyestuffs Corporation, Ltd., and Mr. H. Sutcliffe Smith, of the Bradford Dyers' Association, have been appointed members of the Dyestuffs Industry Development Committee, in the place of Sir William Alexander, K.B.E., and Mr. G. Douglas, resigned.

COMMERCIAL TRAVELLERS' BENEFIT SOCIETY.—The twenty-third annual report and balance sheet of the United Kingdom Commercial Travellers' Benefit Society shows that the Society continues to make good progress: £1 10s 6d. per share was allocated at the end of last year. Mortgages to members amount to over £100,000, and this has enabled many a traveller to purchase his own house on easy repayment terms. The invested capital standing to members' credit is approaching £500,000.

IN THE COURTS.—At Barnsley, on June 12, Walter Goodman, described as a chemist, was bound over on a charge of obtaining money by false pretences.—At Kingston-on-Thames Police Court, on June 17, Hartley Grail (30), engineer, Surbiton, was remanded on charges of unlawfully offering to supply and procure 30 lb. of cocaine, valued at £2,000, to Robert J. Coley, Kingston, and of attempting to obtain £330 from Mr. Coley by false pretences. A police witness stated that he had had powder in the possession of the accused analysed, and found that it was boracic powder.

Irish News

Pharmaceutical Society of Ireland

The latest dates for receiving applications for the July examinations are as follows:—Thursday, June 18, for Preliminary Examination; Wednesday, June 24, for Pharmaceutical Licence Examination; Monday, June 29, for Pharmaceutical Assistant Examination; Tuesday, June 30, for Registered Druggist Examination. Applications should be in the Registrar's hands by 11 a.m. on the respective dates.

Belfast

The Chemists' Golf Cup, competed for by Northern Irish chemists annually, is the gift of Mr. William McMullan, Victoria Street, Belfast, and not of his brother, Mr. T. W. McMullan, M.P. (C. & D., June 13, p. 841).

At an inquest held recently at Belfast on the body of Louise Stuart (29), school teacher, who was found dead in bushes near a golf course with a package of salt of lemon beside her, a verdict of "Death from poison self-administered, while of unsound mind," was returned.

Dublin

Replying in the *Dail* to Dr. Hennessy, who asked whether an Irish firm importing surgical rubber gloves made in U.S.A. must pay an import duty of 15 per cent.; whether foreign firms could send similar gloves duty free direct to hospitals, and whether such firms were thus protected from Irish competition by a 15 per cent. preferential tax, Mr. Blythe said all firms importing rubber gloves were required to pay the duty. If particulars of the cases in which it was suggested that certain firms were allowed to import such goods without payment of duty were furnished, full investigation would be made.

Scottish News

Brevities

Edinburgh pharmacy sports will be held at Powderhall on June 24.

J. & D. Hilston, chemists, Lanark, are opening an optical department under the supervision of Mr. J. W. Prentice, chemist and druggist.

For violation of the speed limit when motoring in Arbroath, recently, Mr. C. Rheinbach, chemist and druggist, Dundee, was fined £2 in Dundee Sheriff Court on June 12.

Among the nominations for the office of Provost at a recent meeting of Johnstone Town Council was that of Bailie S. McConnell, chemist and druggist, who, however, preferred that his name should not go forward and the nomination was withdrawn.

"Competition in some of the smaller places in the South of Scotland seems to be keener than formerly," writes a correspondent. "It is no uncommon thing to find grocers and other shopkeepers showing a wide range of patents and packed goods, such as extract of cascara, eucalyptus oil and liniments."

The business of the late Mr. P. MacFarlane, J.P., chemist and druggist, Apothecaries' Hall, Fort William, whose death (at the age of seventy-six) was announced in our last issue (p. 853), will be carried on by his son, Mr. George A. MacFarlane, chemist and druggist, under the title of MacFarlane & Son.

Glasgow

The registered office of The Chemists' Friendly Society has moved from 194 St. Vincent Street to 206 Sauchiehall Street. Telephone: Douglas 830.

The annual match for the Cartwright trophy of the bowling section of Glasgow Pharmacy Club was played on St. Vincent Green on June 9. The winning rink was Messrs. W. Craig, G. MacKay, J. Logan, and G. MacDonald (skip). The prizes, given by W. B. Cartwright, Ltd., were presented by Mr. T. Adam, chemist and druggist, the "father" of the green.

Legal Reports

Sale after Closing Time.—At Grimsby Borough Police Court, on June 10, Mr. Donald Sutherland, chemist and druggist, Corporation Road, was summoned for having sold Nestlé's Milk and a stick of shaving soap after closing-time. The defendant pleaded "Not guilty." An inspector stated that he kept the defendant's shop under observation from 8.5 p.m. to 8.20 p.m. on May 23. During that period he saw eleven people enter the shop. The defendant's wife told him that she had served the goods in question, but the customer had bought them in the afternoon, and in the evening had returned in order to change them. The magistrates imposed a fine of £1.

Chemical Merchants' Appeal Heard.—In the Court of Appeal, London, consisting of Lords Justices Bankes, Scrutton and Sargant, on June 11, the case of the Controller of the Clearing Office v. Andrew Weir & Co. was heard upon the appeal of the defendants from the judgment of Mr. Justice Finlay in favour of the Controller on a claim for £15,540 7s. 9d. as interest alleged to be due under a contract for the purchase of nitrate of soda from a German firm in 1914, before the outbreak of war (*C. & D.*, April 4, p. 491). Sir Leslie Scott, K.C., and Mr. L. F. C. Darby appeared for the appellants, and the Attorney-General and Mr. D. B. Somervill represented the respondent. Sir Leslie Scott said that the case turned upon the terms of the Treaty of Peace of Versailles and the Peace Treaty Order. It arose out of the purchase by the appellants of two cargoes of nitrate of soda bought from the German sellers before the war for sale to purchasers in South Africa. The English and German Clearing Offices took the view that interest was payable, on the ground that there was a paragraph in the Peace Treaty providing that interest should be payable in the circumstances. In the Peace Treaty, said counsel, interest was not payable on pecuniary obligations unless it was a debt within the meaning of the Peace Treaty. The appellants' case was that here there was no debt, and therefore no obligation to pay interest, and that attitude they had adopted consistently from the start. After hearing, on June 12, the argument of the Attorney-General and the reply of Sir Leslie Scott, the Court reserved judgment.

Chemist's Bill Disputed.—In Marylebone County Court, London, on June 15, Mr. John Forbes, chemist and druggist, trading as F. Andrews, Leinster Terrace, W.2, sued Miss Frances Muriel Kiltie, proprietress of a nursing home, Leinster Gardens, W., for the sum of £35 3s. 8d., the value of goods sold. The plaintiff's case was that he first knew the defendant in 1922, when she asked to be supplied with drugs for the nursing home. She wanted credit, as a neighbouring chemist had stopped giving her credit. The defendant sent prescriptions from time to time, and gave orders over the telephone, but the plaintiff never saw any of the patients. He forwarded the accounts monthly. The Judge (to plaintiff): Was the patient's name always given you with the order?—Not always. The Judge: I see the accounts are made out in the names of the patients. The plaintiff added that Miss Kiltie from time to time paid the accounts, and he had had cheques from her which represented the drugs sent for the patients. In cross-examination, the plaintiff said that the accounts were not furnished separately. There was one patient who paid his account for drugs privately. Counsel: Have you applied for payment on account?—I have sent in bills to Miss Kiltie. Yes, but the bills were in the patients' names. Have you ever told Miss Kiltie in so many words, "You have got to pay these patients' bills"?—No. Mr. Forbes mentioned that he had supplied oxygen cylinders, which he was allowed to retain three weeks free, and then he was charged 1s. 6d. a week for each cylinder. When he could not obtain payment from the defendant, he applied in a few cases to the private patients. The plaintiff's accountant gave evidence as to seeing Miss Kiltie and asking her if it would be convenient to let him have a cheque. He was successful in getting two cheques from her, and she volunteered the addresses of some of the patients. The defendant gave evidence that the first time she went to the plaintiff's shop it was with a

prescription to make up, but she had no conversation with him. When she gave orders, if the goods were for herself she gave her own name; otherwise she gave the name of the patient. She had never agreed to pay for the prescriptions made up for patients. A sister of the defendant stated that she assisted in conducting the nursing home; she sometimes gave orders for prescriptions, and sometimes, when the patient was going to leave the home, she would telephone to the chemist and the bill would be put to the account of the home and given to the patient. A chemist, giving evidence, said he had experience of accounts being made out in the names of the patients. He would look to the proprietress to collect the fees from the patients. The Judge: Supposing she did not collect the amount, what would you do?—I should try to collect the money myself. His honour, in giving judgment, said that it was an instance of trouble arising by giving credit without any clear ideas as to who was responsible for payment. There was some evidence in the case that the account was opened to the credit of Miss Kiltie, and that would be a reasonable course of procedure. A chemist could not know anything worth knowing about the character of patients in the home. He held that the dealings were on the credit of the defendant, and gave judgment for the amount claimed, with costs.

New Companies and Company News

P.C. means Private Company and R.O. Registered Office.

UNITED PHARMACIES, LTD. (P.C.).—Capital £100. Objects: To carry on the business of dispensing chemists, etc. The directors are: Mrs. Z. Lapsker and S. Flatau. R.O.: 63 Bow Road, London, E.3.

SUTCLIFFES, LTD. (P.C.).—Capital £300. Objects: To acquire the chemists' business carried on at 17 High Street, Buxton. The directors are: W. J. Cox and A. O. Wildgoose. R.O.: 17 High Street, Buxton.

LAMBERT WESTON & SON, LTD. (P.C.).—Capital £3,500. Objects: To adopt an agreement with Weston's Estate (Folkestone), Ltd., and to carry on the business of photographers, chemists, opticians, pharmacists and philatelists, stationers and printers, etc. The directors are: W. H. B. Rouse and Jessie F. Rouse. R.O.: 25 Sandgate Road, Folkestone.

EVANS SONS LESCHER & WEEB, LTD.—The report for the year ended December 1924 shows that after making provision for depreciation and bad and doubtful debts, also salaries to directors as departmental managers, there is a trading profit of £20,055. To this has to be added transfer fees and the net amount due from the Inland Revenue for the recovery of excess profit duty, and after deducting interest on bank overdrafts, debentures and mortgages, and charges in respect of the reconstruction scheme, there remains a credit balance of £31,693, which has been applied in reduction of the amount standing to the debit of the profit and loss account as on December 31, 1923. The sale of a portion of the London premises referred to last year was not completed until January 1925, and the company did not, therefore, reap the benefits accruing from that sale in the year under review. The net proceeds of the sale (after repayment of mortgages), viz., £29,000, have been invested for the debenture holders, and are available for repayment of the debentures. The directors had hoped to present simultaneously with the report and accounts the scheme for the reconstruction of the capital of the company; as, however, it may not be possible to comply with the legal formalities before the holiday season, it has been thought desirable to present the accounts now and to submit the scheme for reconstruction in the near future. Having regard to the improved position of the company, and with confidence that this improvement will continue, the directors think that the scheme when presented will meet with the approval of the shareholders. Messrs. W. C. Brinson, T. C. Hewitt and C. E. J. Sendall retire from the Board, and, being eligible, offer themselves for re-election.

Summer Outings

Visit to Brighton

THE annual outing of the staff of C. R. Harker, Staggs & Morgan, Ltd., London, E., was held on June 13, when a number of charabancs left Devon Wharf soon after 8 a.m. and conveyed the party to Brighton. A picnic luncheon was taken on the Sussex Downs, Brighton being reached at about 1.30. The majority of the visitors spent the afternoon in bathing and boating, and at 4 p.m. tea was provided. The return journey started about 6 p.m. Much of the success of the outing was due to the untiring efforts of Mr. Harry Cleaver, secretary, and his committee.

Birmingham Chemists at Coventry

THE Birmingham Pharmaceutical Association, on June 10, to the number of about eighty members and friends, visited Coventry at the invitation of Colonel Wyley. The "Rover" Works, where "Rover" cars are produced, was first inspected, the party afterwards visiting Wyleys, Ltd., wholesale and manufacturing chemists, over whose works they were conducted by Colonel Wyley, who explained the various processes in course of operation. By the kindness of Colonel and Mrs. Wyley, the visitors were entertained to tea in a marquee on the lawns of their residence, "Charterhouse," and taken over the historic building and the magnificent grounds. The building was originally a Carthusian monastery, the foundation stone of which was laid by King Richard II in 1385. Mr. J. T. Bell (President), on behalf of the Association, expressed the thanks of the visitors to their hosts.

Cricket Match at Arundel

THE Reigate and Redhill Pharmacists' Association and Branch of the Pharmaceutical Society held the annual summer outing on June 10, when a party of forty-four proceeded to Arundel by charabanc. A cricket match had been arranged with Portsmouth Pharmacists' Association on the Arundel Cricket Ground, play lasting two



Top row, left to right, in flannels: Messrs. Sadler, Mitchell, Barlow, Padwick, Howell, Oram, Hocken.
Front row: Messrs. Walmsley, Gaddes, Bush, Powell.

and a half hours. Reigate and Redhill, captained by the President (Mr. Barlow) hit up 85 for five wickets. Portsmouth and District started in promising style, but only scored 65 runs. In the match for the winners Messrs. Padwick, Mitchell, Powell and Howell batted well, Mr. Parsons being top scorer for the losers. After the match tea was taken at the Bridge Hotel, and the parties divided to enjoy the delightful ride home in the cool of the evening.

Oldham Chemists' Outing

IN response to an invitation from W. B. Cartwright, Ltd., Rawdon, to members of the Oldham Branch of the Pharmaceutical Society, a party left on June 5 to visit the works at Rawdon. Lunch was provided in the works canteen, after which the chairman of the branch, Mr.

J. Lees, moved a vote of thanks to Messrs. Cartwright for their hospitality, Mr. Rennie responding. The works were inspected after lunch, the party proceeding to the Lester Arms Hotel, Ilkley, for tea, and, after a visit to Heber Ghyll, the return journey was started.

Hasletts' Annual Outing

THE annual excursion of the staff of J. & J. Haslett, Ltd., wholesale druggists, North Street, Belfast, took place on June 13, the venue this year being Portrush and the Giant's Causeway. The company, numbering about 120, entrained at the York Street terminus, and luncheon awaited the party on arrival at the Causeway. After luncheon a vote of thanks was accorded the directors, following which the party set out to explore the wonders and mysteries of Causewayland. The day's outing was a most enjoyable and successful one.

Southampton Chemists at Melchet Court

THE annual outing of the Southampton Chemists' Social and Athletic Club was held on June 10. The party assembled at the Clock Tower at 2 p.m. and proceeded by way of Lyndhurst to Melchet Court, the residence of Sir A. Mond, who gave the club the privilege of viewing the extensive pleasure grounds and provided a guide. A brief space of time was spent in the visit, and the journey was resumed to Romsey, when forty-six sat down to tea, served at the Abbey Hotel. At the conclusion of the repast the President (Mr. Atkinson) welcomed the visitors and proposed a vote of thanks to Sir A. Mond. Votes of thanks were passed also to the President and secretary, and a visit was afterwards made to the Abbey. The return journey was made by Winchester.

Miniature Conference at Brighton

ON June 10 a number of chemists from London and the Home Counties visited Brighton as the guests of the Brighton and Hove Branch of the Pharmaceutical Society. The primary intention was to hold a conference at the Royal Pavilion, but so irresistible was the brilliant sunshine that business was transacted with celerity, and the guests found time for motor-coach trips both before and after luncheon, which was served in the Royal Pavilion. Among those present were the Mayor and Mayoress (Alderman C. J. Teasdale, J.P., and Mrs. Teasdale), the President of the Pharmaceutical Society of Great Britain (Mr. P. F. Rowsell, Exeter), Sir William Glyn-Jones (secretary of the Society), with whom was Lady Glyn-Jones, and many distinguished pharmacists, while the company also included a large number of ladies. The Mayor proposed "The Pharmaceutical Society of Great Britain." The toast was coupled with the name of the newly-elected President (Mr. P. F. Rowsell), who expressed the appreciation of the guests for the reception. With regard to the work of the Society, the President said the country had shown by a recent election what it thought of their attitude with reference to by-laws and regulations, and without entering upon any controversial ground he thought he might say that the policy of the Council had received very loyal support. Dr. Leonard Parry proposed the toast of "The Brighton and Hove Branch." Councillor Yates, who responded, said many years ago the pharmacists of Brighton were able to take an active part in the deliberations of the Society in Bloomsbury Square, but at the moment they were represented only by a reflected glory. That might be rectified in the near future by some pharmacist, if not actually from Brighton, from one of the branches in Sussex. He hoped, therefore, the Conference of the Society of Great Britain would be held in Brighton in 1927. (Applause.) The health of Sir William Glyn-Jones was proposed, and in reply Sir William observed that if nothing else had been done by that Conference, it had taught them to hold the Brighton Branch in higher esteem than they held it before. Nothing but good could result from such conferences, and he thought the advice should go forth to every branch: "Follow Brighton."

The Progress of Pharmacy

AND ALLIED SCIENCES

PHARMACY

Cholesterin-Vaseline.—To permit the incorporation of saline solutions in ointments prepared with vaseline, A. Goris and A. List ("Bulletin des Sciences Pharmacologiques," May 1925) report that they have obtained excellent results from the addition of 1 gram of cholesterin to 1,000 grams of vaseline. This base rapidly absorbs 20 per cent. of its weight of water, yielding stable ointments, and has been in use for a considerable time with highly satisfactory results in hospitals in Paris and in Le Mans.

Incompatible of Powders Mixture.—French pharmacists are frequently called upon to dispense cachets containing a mixture of aspirin and sodium bicarbonate, which soon forms a deliquescent mass owing to the interaction between the two ingredients, resulting in the formation of acetate and salicylate of sodium. To obviate this effect, Pingot ("Bulletin des Travaux de la Société de Pharmacie de Bordeaux," No. 2, 1925) suggests the use of tablets of both substances, which are separated in the cachet by a wafer.

Fowler's Solution.—L. W. Winkler ("Pharmazeutische Zentralhalle," April 23, 1925) points out that through the action of atmospheric oxygen the potassium arsenite present in Fowler's solution is gradually oxidised to potassium arsenate, with the result that when assaying an old solution, the result shows a lower content of arsenic than is actually the case. For this reason he suggests that the present alkaline solution should be replaced by an acid solution, prepared by dissolving 1 gram of arsenious acid and 0.5 gram of sodium hydroxide in 5 c.c. of water. When solution has taken place, 50 c.c. of water and 5 grams of sulphuric acid (16 per cent.) are added; the mixture is set aside for twelve hours, filtered, and the weight completed with water to produce 100 grams.

Regional Anæsthesia.—C. Hope Carlton ("British Medical Journal," I, 1925, 648) describes the method of preparing novocain in solution: Four hundred c.c. of sterile 0.9 per cent. sodium chloride was brought to the boiling point in a flask previously boiled for fifteen minutes; 75 grains of novocain was added, and the whole gently boiled for three minutes, after which the mixture was diluted with freshly-boiled sterile sodium chloride solution to 500 c.c. This gave a 1 per cent. solution. At the last possible moment before injecting, 0.1 per cent. adrenalin was added in the proportion of 10 minims (not drops) to each 100 c.c. of the novocain solution. An ampoule containing 3 grains of caffeine, 7 grains of sodium benzoate, and 0.025 grain of strychnine should be in readiness in the event of a severe novocain reaction. For severe cases of pallor, nausea, and slow pulse, from 5 to 10 minims of adrenalin is injected.

Infusion of Senega.—The hæmolytic index of a large number of infusions of senega, prepared from the cut and the powdered drug, was determined by K. A. Karsmark ("Pharmazeutische Zentralhalle," June 4, 1925). The average hæmolytic index of infusions prepared with cut root was found to be 1 : 2.733, and of those prepared with the powdered drug, 1 : 4.233. The

addition of sodium carbonate to an infusion prepared with cut root has the effect of almost doubling the hæmolytic index (1 : 4.408), compared with the use of water alone, but this addition has an adverse influence when using the powdered drug (1 : 3.633). As a result of his observations, the author recommends that infusion of senega should be prepared with coarsely powdered root, or if the cut drug is employed, 0.6 to 1 per cent. of sodium carbonate should be added. As at present prepared, only one-third of the saponin content of the root is extracted, and in this connection Karsmark points out that a more complete extraction of the saponins is of economic importance, since it permits the use of half the amount of drug usually prescribed.

Compound Syrup of Glycerophosphates.—The following formula for this preparation is in use in the pharmacies of Oslo ("Norges Apotekerforenings Tidsskrift," May 1925):—

Glycerophosphate of iron	...	5	grams
Glycerophosphate of quinine	...	2	grams
Glycerophosphate of manganese	...	1	gram
Glycerophosphate of strychnine	...	0.05	gram
Glycerophosphate of sodium	...	30	grams
Citric acid	...	2	grams
Sodium citrate	...	3	grams
Sugar	...	600	grams
Distilled water, to produce	...	1,000	grams

The glycerophosphates of iron, manganese, quinine and strychnine, the citric acid and sodium citrate are dissolved in about 300 c.c. of water, the solution is filtered and 600 grams of sugar added to the filtrate; when complete solution is effected the mixture is heated to boiling. After cooling, add the sodium glycerophosphate, dissolved in 30-40 c.c. of water, and complete to 1,000 grams with water.

PHARMACEUTICAL CHEMISTRY

Thyroid Assay.—A new method of standardisation for thyroid preparations is proposed by W. Straub ("Deutsche medizinische Wochenschrift," No. 1, 1925), based on the toxicity for mice of definite doses of acetonitrile, the lethal dose being 0.0009 gram per gram animal weight, an effect which is partially inhibited by the administration of thyroid. The author suggests as a standard that 0.2 c.c. of a 5 per cent. suspension of carefully desiccated thyroid gland should increase the resistance of mice to the minimum lethal dose of acetonitrile by about 100 per cent.

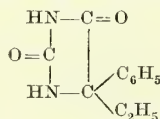
Organoleptic Tests on Vanilla Extracts.—J. B. Wilson and J. W. Sale ("Industrial and Engineering Chemistry," May 1925, p. 505) give the results of tasting tests on vanilla extracts. From the standpoint of aroma and flavour, 65 per cent. neutral alcohol is the most desirable solvent. The Research Committee of Flavouring Extract Manufacturers' Association found 47 to 50 per cent. alcohol (in final product) the best proportion for extracting vanilla beans. Addition of alkali increases strength of flavour, but makes aroma less pleasant, and affects taste also with Tahiti bean extract. Extracts prepared from oleo-resins made with carbon tetrachloride as solvent possessed objectionable flavour.

The Progress of Pharmacy and Allied Sciences

Loss of Glycerol on Evaporation has been investigated by M. P. I. V. Tyer and F. L. Usher ("Journal of the Chemical Society," April 1925, p. 841), who measured the vapour pressures of concentrated solutions of glycerin with water. The composition of the mixtures was checked by refractometric determinations. The percentage of glycerol in vapour phase is negligible below 75 per cent. glycerol in liquid. The percentages of glycerol in vapour phase for percentage glycerol following in parenthesis were:—0.2 (75 per cent.); 0.3 (80 per cent.); 0.4 (85 per cent.); 0.5 (88 per cent.); 0.6 (91 per cent.); 0.7 (93 per cent.); 0.85 (95 per cent.); 0.95 (96 per cent.); 1.2 (97 per cent.); 1.7 (98 per cent.); 17 (99 per cent.); 100 (100 per cent.).

Emetine from Cephaeline.—In a communication to the colonel-director of the Brazilian Military Chemico-Pharmaceutical Laboratory, J. Pepin Lehalleur draws attention to the fact that whereas the ipecacuanha collected in the state of Matto Grosso contains almost exclusively emetine, the roots collected in the states of Rio and of Minas show a high proportion of cephaeline. He suggests that emetine might be profitably prepared by the methylation of cephaeline, and quotes as an analogy the methylation of morphine to codeine. For this purpose he suggests the use of neutral methyl sulphate, and according to the "Revista de Quimica e Farmacia Militar" (April 1925), experiments are being carried out in this laboratory, in conjunction with pharmacist-lieutenant V. Lucas, to effect the synthesis of emetine from cephaeline.

Hydantoin Hypnotics.—T. J. Thompson, H. L. Bedall, and G. M. Buffett have prepared several homologues of 4, 4-phenyl-ethyl-hydantoin or nirvanol:—



Preliminary tests indicate that phenyl-propyl and phenyl-iso-butyl-hydantoins are about equal to that of nirvanol, but phenyl-iso-propyl and phenyl-butyl hydantoins are devoid of hypnotic effect, which would seem to prove that hypnotic reaction is concerned in some way with the number of carbon atoms in a compound as well as their arrangement.

Determination of Mercuric Chloride.—For the determination of mercuric chloride in tablets, E. Rupp and P. Mais ("Apotheker-Zeitung," May 13, 1925) recommend the following method, based on the use of a solution of hydrocyanic acid, prepared as required, by dissolving 0.2 gram of potassium cyanide in 20-30 c.c. of water, adding 1 or 2 drops of a 0.1 per cent. solution of dimethyl-aminoazo-benzol, methyl orange or methyl red, and sufficient *N*/10 hydrochloric acid, or simply a mixture of 1 part of dilute hydrochloric acid with 2.3 parts of water, to produce a change of colour. The determination is carried out by mixing 20 c.c. of a solution obtained by dissolving one tablet (= 1 gram of mercuric chloride) in 100 c.c. of water with the above solution of hydrocyanic acid and titrating the mixture with *N*/10 sodium hydroxide; 1 c.c. *N*/10 sodium hydroxide = 0.01355 gram of mercuric chloride.

Coramin.—For years attempts have been made to produce a water-soluble form of camphor; however, the various derivatives so far prepared do not possess its typical therapeutic properties. F. Uhlmann ("Zeitschrift für die gesamte experimentelle Medizin," Vol. 43, 1924) discusses the properties of pyridine carboxylic acids, particularly the diethylamide of pyridine- β -carboxylic acid (coramin), the action of which is almost identical with that of camphor, and is indeed superior to the latter, particularly in regard to its action on the blood pressure, respiration, stimulating action on the heart, and antagonism to morphine. In the frog, in small doses, it

exhibits an effect similar to that of digitalis. The stimulating effect on the central nervous system extends to the brain and to both motor and sensory nerves. The antagonistic action of coramin to morphine points to its use as a substitute for atropine in combating paralysis of the respiratory centres produced by morphine.

The State of Silver in Protargol and Collargol.—I. M. Kolthoff ("Journal of the American Pharmaceutical Association," March 1925) finds that protargol has a good buffer value for silver ions (between *Pag* 2.8 and 4.0, where *Pag* = $-\log \text{Ag}^+$), and that all the silver can be titrated potentiometrically with iodide. The first rise in potential occurs after transformation of silver proteinate into silver iodide, while there is a second rise when the silver chloride present in protargol (0.85 per cent.) is transformed into iodide. This is contrary to the statement in the B.P. Codex as follows: "The fact that solutions of silver proteinate are not precipitated by sodium chloride indicates that silver ions are not present, and any silver action can therefore result only after decomposition of the salt." The impression that no reaction occurs is due to the silver halides remaining in colloidal solution. Collargol (colloidal silver) contains nearly all the silver in a metallic state, only a small proportion being ionogenic (oxide).

Differentiation of Aspirin and Acetylsalicylic Acid.—H. Valentin and A. Lieber-Tilsit ("Apotheker-Zeitung," June 10, 1925) report the results of an investigation undertaken to establish the differences between aspirin (Bayer) and various brands of acetylsalicylic acid. The chemical composition of both being identical, it was evident that these differences could only reside in variations in their respective physical characters. In the first place, aspirin (Bayer) is remarkable for the form of its crystals, in which it is closely approximated by Heyden's acetylsalicylic acid, and by its constant melting point of 135°, whereas that of various brands of acetylsalicylic acid was found to vary between 134° and 137°. When thrown on to water, aspirin (Bayer) covers the whole surface, whereas other makes of acetylsalicylic acid unite to form a few masses, and also dissolve more readily. The authors further state that the dissociation process in aqueous solution, and in pepsin-hydrochloric acid, is appreciably retarded in the case of the former.

Digitalis in the Tropics.—R. N. Chopra, S. C. Bose and P. De ("Indian Medical Gazette," March 1925) draw attention to the fact that clinical observations as well as biological and chemical assays of tincture of digitalis show that it undergoes deterioration rapidly in a tropical climate such as that of India. This deterioration cannot be accurately determined by any single method in the laboratory; clinical tests give the most reliable information. The average dose of 5 c.c. of the tincture per 100 lb. of body weight required to get the patient under digitalis effect in from thirty-six to forty-eight hours is considerably increased after the tincture has been in the tropics even for a short time. Deterioration is due to some change in the digitalis glucosides, the nature of which has not yet been determined. Such tinctures are more toxic to cats when given intravenously, but a considerable weakening in the therapeutic efficacy is evident. With tinctures of standard strength, doses of at least 20 to 30 minims (1.25 to 1.9 c.c.) three times a day should be given. If rapid effects are desired in urgent cases, these may be increased to 45 and 60 minims (2.8 to 3.75 c.c.).

Hydrogen Peroxide Assay.—E. Rupp and G. Siebler ("Pharmazeutische Zentralhalle," March 26, 1925) draw attention to the fact that volumetric solutions of potassium bromate and arsenious acid are more stable than solutions of iodine and sodium thiosulphate, and are therefore particularly suited for use in pharmaceutical laboratories, where volumetric determinations are only occasionally made. They describe the following method for the assay of hydrogen peroxide solutions:—25 c.c. of

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N/10 arsenious acid and 3 to 5 c.c. of solution of sodium hydroxide (15 per cent.) are added to 10 c.c. of a dilution containing 10 grams of solution of hydrogen peroxide in 100 c.c. After one minute the mixture is acidulated with 5 to 10 c.c. of hydrochloric acid (25 per cent.), 50 c.c. of water is added, and the whole brought to boiling. Titration is carried out with *N/10* solution of potassium bromate, using solution of methyl orange as indicator. 1 c.c. of *N/10* arsenious acid = 0.0017 gram of hydrogen peroxide. Titration is carried out while the mixture is still hot, when the complete discharge of the pink colour permits of an exact determination.

Cinnamic Aldehyde.—R. Eder and W. Schneider ("Schweizerische Apotheker-Zeitung," May 16, 23 and 30, 1925) suggest the following modification of Hanus' method of determining the content of cinnamic aldehyde in cinnamon oil and bark: A mixture of 0.15 gram (about 4 drops) of oil of cinnamon and 85 c.c. of water is vigorously shaken for 10 minutes in an Erlenmeyer flask of 150 c.c. capacity provided with a glass stopper, whereupon a hot solution of 0.2 gram of semi-oxamazine in 15 c.c. of water is added, the whole well shaken, and set aside for at least 20 hours. The precipitate is collected in a tared glass filter previously dried at 150°, washed with water, then dried for two hours at 140°-150° and weighed after cooling in an exsiccator. The weight of the precipitate, multiplied with 0.6083, gives the content of cinnamic aldehyde. To determine the content of cinnamic aldehyde in cinnamon bark, 6 grams of powdered drug is submitted to steam distillation, and a hot solution of 0.25 gram of semi-oxamazine in 15 c.c. of water is added to 250 c.c. of the distillate. The whole is well shaken for 10 minutes and treated as above. The weight of the precipitate, multiplied by 10.14, gives the percentage of cinnamic aldehyde present in the bark.

Mercuric Chloride Tablets.—For the rapid determination of mercuric chloride in tablets, E. Percs ("Pharmazeutische Zentralhalle," June 11, 1925) proposes the following procedure: two tablets, each weighing 1 gram, or one tablet of 2 grams, are dissolved in sufficient distilled water to produce 100 c.c., and 10 c.c. of this solution is transferred to a small flask, whereupon 2 c.c. of nitric acid (25 per cent.) and 1-2 c.c. of solution of starch are added. Under constant agitation *N/10* solution of potassium iodide is added drop by drop; the yellow precipitate which first appears dissolves, and is followed by a red precipitate of mercuric iodide, whereupon, on the further addition of potassium iodide solution, blue rings develop where the latter falls on to the liquid and disappear when the whole is gently agitated, and finally the liquid assumes a peculiar brown colour, resulting from the red colour of the precipitate and the blue coloration due to the iodide of starch. When this point is reached the result is read, based on the reaction $\text{HgCl}_2 + 2\text{KI} = \text{HgI}_2 + 2\text{KCl}$. A tablet weighing 2.0233 grams required 7.4 and 7.6 c.c. of *N/10* potassium iodide solution, the amount of mercuric chloride, on determination by the usual volumetric method proved to be 1.0064 grams, and determined gravimetrically, 0.9993 gram. Although it does not yield absolutely accurate results, the author maintains that this method is useful where a rapid determination is required.

Silver Sols with carbohydrate or related substance as the protecting agent are reported upon by Ira D. Garard and Grace E. Duckers ("Journal of the American Chemical Society," March 1925, p. 692). The procedure adopted consisted of adding a definite volume of protective dispersion to a measured volume of silver nitrate solution (normal or decinormal). The reducing solution (formaldehyde or glucose) was added and then water to a strength desired (such as 0.01 *N* silver agar sol). Finally, sodium hydroxide solution, equivalent silver nitrate, was added, and the mixture finally stirred for 20 minutes with a mechanical stirrer. The strength of the protective solutions were: agar-agar, 15 gm. per litre,

and gum arabic or dextrin, 20 gm. per litre. With 0.001 *N* silver nitrate a green, fluorescent sol was formed in the presence of gum acacia and glucose, and a brown one with agar-agar. The sol was reversible after evaporation to dryness on a water bath. Similar sols (darker in colour) were made from 0.01 *N* and 0.1 *N* silver nitrate. By dialysis and subsequent concentration two sols were made containing 30 to 35 per cent. of silver, one protected with gum acacia and the other with agar-agar. Silver sols protected with gum acacia react with chlorides of antimony, bismuth, copper, gold, and mercury to give other sols. The bactericidal activity of silver sols protected with gum acacia or agar-agar is equal to that of commercial sols protected with protein.

Cantharidin Assay.—As a result of exhaustive experimental work, R. Eder and W. Schneider ("Schweizerische Apotheker-Zeitung," April 25 and May 2, 1925) suggest the following method for determining the cantharidin content of cantharides: A mixture of 10 grams of powdered cantharides, 100 grams of benzol, and about 1 gram of hydrochloric acid (25 per cent.) is heated for 30 minutes under a reflux cooler. On cooling, 81 grams (= 8 grams of drug) is filtered through a dry filter of 18 cm. diameter into a tared Erlenmeyer flask of 200 c.c. capacity. The benzol is reduced by careful distillation on a water bath to about 5 grams, and this remainder is carefully evaporated on the water bath at a temperature not exceeding 60° by blowing in a current of dry air. To the still warm residue 10 c.c. is added of a mixture of 19 volumes of petroleum ether and 1 volume of absolute alcohol. After about 10 minutes the solution is poured on to a pledget of cotton wool placed in a filter, taking care to avoid the inclusion of any crystals. The crystals in the flask are again washed with 5 c.c. of the petroleum-ether-alcohol mixture until the liquid which passes through the cotton wool is colourless. Crystals which may collect on the pledget are dissolved by means of 2 c.c. of warm chloroform, repeating this operation two or three times, and adding these portions to the contents in the tared flask. The chloroform is removed by means of a current of dry air, and the residue dried for 12 hours over sulphuric acid in an exsiccator. The weight of the residue should amount to at least 0.064 gram, corresponding to a minimum content of 0.8 per cent. of cantharidin. The melting point of the latter should be determined, pure cantharidin having a melting point of 212°.

Identification of Vanilla Essences.—C. B. Gwadinger ("Industrial and Engineering Chemistry," March 1925), publishes a method by which he claims to be able to differentiate between essences of vanilla made with Tahiti and Bourbon vanilla beans. Walbaum (Schimmel's "Report," October 1909, 142) showed that Tahiti beans contained anisic alcohol, anisic aldehyde and anisic acid. Gwadinger has investigated Bourbon vanilla beans to see whether these bodies are present, and has also re-examined Tahiti beans. The Tahiti beans are extracted with chloroform; the chloroform was distilled, the last portions by steam distillation, and the resulting aqueous liquid extracted with ether. The chloroform and ether extracts were combined and washed with caustic soda, and then with sodium bisulphite solution. The chloroform-ether extract was again distilled with steam and the aqueous liquid extracted with ether. On evaporation of the solvent 3 grams of a yellowish oil of pleasant odour was obtained (from 5 kilos of beans). This, on oxidation with dilute permanganate, yielded anisic acid, melting at 182.8°. The refractive index of the oil was 1.5411 at 24° (pure anisyl alcohol = 1.5438). Bourbon vanillas treated similarly yielded a light yellow oil, (3 grams from 5.9 kilos) of refractive index 1.4850 at 24°. No anisic alcohol or anisic acid was found in this oil. A negative result for anisyl alcohol was obtained in the case of Mexican, Java, Surinam Tonquin, and Angostura Tonquin, and a positive result for vanillones, and even for essences made with 95 per cent. Bour-

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bon and 5 per cent. Tahiti beans. The following test is stated to give satisfactory results. Fifty c.c. of the essence is evaporated in a current of air, without heating, to a volume of 15 c.c. This is diluted to 50 c.c. with water and extracted once with 50 c.c. of ether in a separator. The ether is washed three times with 15 c.c. portions of 2 per cent. caustic soda solution, and then once with 15 c.c. of water. The ether is then evaporated in a current of air, and the residue dissolved in 0.5 c.c. of alcohol. Two or three drops of the alcohol solution are added to 2 or 3 c.c. of strong sulphuric acid in a test tube, and shaken. With Tahiti beans a deep permanent colour develops at once, which is not the case with any variety of bean other than vanilloes and Tonquin beans.

AGRICULTURAL CHEMISTRY

Arsenical Preparations Adherent to plants.—W. Moore ("Industrial and Engineering Chemistry," May, p. 465) finds that calcium arsenate or other arsenates for use as sprays can be manufactured by any desired method, and the requisite positive charge for making the arsenate adhere to the leaves of plants may be imparted as the final step in manufacture. A positively charged arsenical is one in which the particles contained an adsorbed metallic ion (iron, aluminium, zinc, lead, copper, magnesium, or calcium). The conditions favouring the adsorption of the ion were found to be the formation of a basic arsenic compound in the presence of a slight excess of a soluble metallic salt, preferably in some cases the salt of a weak acid.

ANALYTICAL CHEMISTRY

Test for Ferric Salts.—G. Denigès ("Bulletin des Travaux de la Société de Pharmacie de Bordeaux," No. 2, 1925) recommends the following delicate test for determining the presence of traces of ferric salts:—A solution is prepared, as required, of 0.1 gram of alloxantin in 10 c.c. of volumetric solution of sodium hydroxide, and an equal volume of this reagent is added to the solution to be tested. In the presence of a ferric salt a blue colour appears, which is still perceptible in a concentration of about 1/10 milligram of ferric ion in 1,000 c.c.

Nessler's Solution.—H. D. Richmond ("Analyst," February 1925) gives the following directions for preparing a particularly sensitive solution:—A solution of 17.5 grams of potassium iodide in 100 c.c. of water is mixed with a solution of 15 grams of mercuric chloride in 300 c.c. of water, the precipitate is thoroughly washed by decantation, and subsequently dissolved in a solution of 17.5 grams of potassium iodide in 100 c.c. of water. A few drops of mercuric chloride solution are then added until a red precipitate insoluble on shaking is produced, the mixture is diluted to about 500 c.c., cooled in ice water, and mixed with a quantity of 50 per cent. solution of sodium hydroxide solution (diluted with 200 c.c. of water and cooled in ice water) containing 105 gram of sodium hydroxide. The solution is cooled well during mixing, made up to 1,000 c.c., left to settle, and the clear liquid decanted for use.

Colorimetric Determination of Cobalt in Presence of Nickel.—B. S. Evans, at the May meeting of the Society of Public Analysts, described a new method for the determination of cobalt in presence of nickel. The method is based on the production of highly coloured cobalt ions when cobalt in ammoniacal solution is treated with sodium peroxide. In absence of interfering elements, the cobalt in the sample tube can be matched by the colour formed in a solution of cobalt ammonium sulphate, the tube being left for some minutes after each addition to allow the colour to develop. In the presence of nickel the operation is carried out in a Walpole colorimeter, the blue colour of the nickel being stabilised and rendered entirely quantitative by the addition of sodium citrate; in this way the composite colour produced by the nickel and cobalt can be exactly matched by separate additions of standard nickel and cobalt solutions.

Determination of Small Amounts of Iodine.—N. A. Lange and L. A. Ward ("Journal of the American Chemical Society," 47, No. 4, p. 1000) advocate *o*-tolidine as a reagent for the accurate colorimetric determination of iodine. Iodine in neutral solution, or iodides oxidised by hydrogen peroxide, produce a blue-green colour with this reagent, the lower limit of colour development being with 0.01 milligram of potassium iodide in 15 c.c. of sample under test, while above 0.10 milligram the colour is too intense for satisfactory comparison with standards. The sample to be tested is made slightly alkaline with sodium hydroxide, and 10 c.c. of hydrogen peroxide solution is added to oxidise any nitrites present, the mixture being evaporated to 20 c.c. After filtration (and washing the residue), the combined filtrate is made neutral to litmus by the addition of sulphuric acid and evaporated to a little less than 30 c.c. After dividing into two equal portions, one part is treated with 0.5 c.c. of tolidine solution (1 gram of *o*-tolidine in 150 c.c. of 95 per cent. alcohol and 5 c.c. of 3 per cent. hydrogen peroxide) and diluted to 15 c.c. The other portion is saturated with hydrogen sulphide, excess of which is then removed by boiling and 0.5 c.c. of tolidine solution added after cooling, the volume being made up to 15 c.c. Hydrogen peroxide (5 c.c.) is added from a burette as quickly as possible to the two samples and to ten standards of comparison (containing 0.01 to 0.1 milligram of iodine per c.c. in gradations of 0.01 milligram). Each tube is shaken thoroughly and comparisons made within five minutes, as the blue colour gradually turns brown. The values from the solution treated with hydrogen sulphide give both iodide and iodate, the untreated tube iodide and iodine. It is essential to remove all hydrogen sulphide before adding the reagent. The method is made applicable to solutions (such as drinking water) containing interfering substances, such as bromides and chlorides, by a preliminary steam distillation in acid solution with ferric chloride. The method is of importance owing to the connection between distribution of iodine and endemic goitre.

BIOLOGICAL CHEMISTRY

Parathyroid Hormone.—J. B. Collip ("Journal of Biological Chemistry," March 1925) describes the following method of isolating a hormone from parathyroid glands:—Fresh glands from the ox were extracted with an equal volume of 5 per cent. hydrochloric acid for one hour at 100°; after mechanical separation of the fat the bulk of the proteins was removed by making the solution alkaline and then adding hydrochloric acid to the point of maximum precipitation. Oral, subcutaneous, or intravenous administration of the filtrate from this protein precipitate prevented or cured tetany in parathyroidectomised dogs, and further caused a marked rise in the concentration of calcium in the blood both of parathyroidectomised and normal animals.

Colour Reaction for Vitamin A.—O. Rosenheim and J. C. Drummond, at the meeting of the Biochemical Society on May 11, described colour reactions given by arsenic chloride and other dehydrating agents (trichloroacetic acid, or dimethyl sulphate) when the growth-promoting Vitamin A is present. It is suggested that the chromogenic substance, which resists saponification, is a derivative of cholesterol. The method can be used for estimating the Vitamin A activity of cod-liver oil by adding 1 c.c. of reagents (trichloroacetic acid or arsenic chloride) to 1 drop (= 20 mgm.) of oil, and comparing with known standard. The results judged by intensity of the brilliant ultramarine-blue colour (which rapidly changes to violet and gradually fades) agrees with tests on animals.

Irradiation and Vitamin A.—A production of growth-promoting and antirachitic properties by irradiation of sterol containing materials with ultra-violet is confirming the practice of exposure to sunlight or violet-ray treatment as a substitute for Vitamin A. A. F. Hess and

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M. Wienstock ("Journal of Biological Chemistry," 63, p. 297) find that etiolated and green leaves of wheat and lettuce become antirachitic on exposure to ultra-violet light, which is without this effect on chlorophyll, haemoglobin, cream, glycerol, or the phosphatides of egg-yolk. Growth-promoting properties akin to Vitamin A have been produced by irradiation of cholesterol (Drummond, Rosenhain, and Coward, "Journ. Soc. Chem. Ind.," 44, p. 123), and in phytosterol from cottonseed oil and cholesterol from lanolin and brain tissue (Hess, Wein, and Helman, "Journ. Biological Chem.," 63, p. 305). "Nature" (June 6, 1925, p. 889) discusses the use of ultra-violet rays as a substitute for or generator of fat-soluble vitamins.

INDUSTRIAL CHEMISTRY

Savonade.—This is the name applied to a combination of methyl-hexalin and oleic alkali prepared by a patented process (German patent 365,160), which occurs as an oily, transparent liquid, with a camphoraceous odour. It is soluble in water, and miscible with a number of liquid hydrocarbons, with which it yields compounds soluble in water, or forming an emulsion with the latter. In the textile industry it is largely used as a detergent, besides finding many applications in other directions. Recently, it has been suggested as a vehicle for insoluble metallic oleates, to promote their resorption through the skin.

To Distinguish Cotton from Linen Fibres.—At the April meeting of the Society of Public Analysts, W. Dickson described a new reaction for distinguishing between cotton and linen fibres. The reaction depends upon the different behaviour of the two fibres when they are stained with ammoniacal silver nitrate and subsequently cleared with very dilute nitric acid. Cotton retains little or no silver, while linen retains a sufficient proportion to make it very dark in colour under the microscope. When mixtures are viewed under a polarising microscope it is possible, by turning the nicols, to cut the cotton and make the linen appear, or cut out the linen and make the cotton appear. This latter condition is seen when the field is polarised, the linen being so black as to be merged into the black background.

Rotenon.—Derris root has recently been introduced in Japan as an insecticide, and an extraction of the roots of *Derris elliptica*, Benth., S. Takei ("Biochemische Zeitschrift," Vol. 157, Nos. 1 and 2 (March), 1925) obtained a yield of 1.5 to 6 per cent. of rotenon, the active principle, of the composition $C_{15}H_{16}O_5$, melting point 163° . This substance is extremely toxic to animals when administered subcutaneously, and for white rats the minimum lethal dose was found to be 0.00125 gram per 100 grams animal weight. Rotenon is insoluble in water, but soluble in organic solvents. On hydrolysis with alcoholic potassium hydroxide it yields an acid, $C_{15}H_{14}O_5$, which on fusion with alkali gives rotenic acid, $C_{15}H_{12}Me_2(COOH)OH$, which is not identical with any of the three known dimethylsalicylic acids. Rotenic acid may also be prepared direct from rotenon by fusion with potassium hydroxide. By oxidation of rotenon with chromic acid in boiling acetic acid solution, rotenonone, $C_{15}H_{14}O_6$, is obtained; this also gives rotenic acid on fusion with potassium hydroxide.

Turkish Mineral Waters.—Asiatic Turkey is very rich in mineral springs, particularly the provinces of Brussa and Trebizond. However, practically no steps have been taken to turn these valuable natural resources to account, and it is only recently that the mineral waters of Kechiche Dag and of Kissarna have been bottled and are finding an increasing sale in Turkish pharmacies. Prior to the exploitation of these two mineral waters, a retired chief pharmacist of the army of the Ottoman Empire attempted to popularise the use of the water of the springs of Tchitli, the composition of which underwent an appreciable modification following the last seismic shocks in this volcanic region. An analysis of

the two waters by Dr. J. Zanni revealed the following composition per 1,000 c.c.:—

	Kechiche Dag	Kissarna
Specific gravity ..	1.0025	—
Free carbonic acid ..	1.400 grams	1.900 c.c.
Sodium bicarbonate ..	2.900 "	1.4273 grams
Calcium bicarbonate ..	0.917 gram	—
Magnesium bicarbonate ..	0.424 "	—
Ferrous bicarbonate ..	0.002 "	—
Calcium carbonate ..	—	0.2953 gram
Sodium chloride ..	0.236 "	0.3101 "
Potassium chloride ..	0.057 "	0.0448 "
Sodium sulphate ..	0.010 "	0.2326 "
Magnesium sulphate ..	—	0.1740 "
Calcium sulphate ..	—	0.2792 "
Ferrous oxide ..	—	0.0020 "
Aluminium ..	0.005 "	0.0010 "
Silicium ..	0.004 "	0.0440 "
Lithium ..	traces	—
Phosphates ..	traces	—
Total ..	5.955 grams	2.7203 grams

Constitution of Pectin.—D. R. Nanji, F. J. Paton, and A. R. Ling, in the "Journal of the Chemical Society" (May 22, 1925, p. 253T), utilise the production of carbon dioxide by decarboxylation of polysaccharides with hydrochloric acid to determine uronic acid complexes in pectins, oxy-celluloses, gums, and other plant materials. The content of uronic acid anhydride is calculated by multiplying percentage of carbon dioxide by 4. The results given include the following:—

	Per cent. uronic acid anhydride	Per cent. Pectic acid found
Agar-agar ...	4.16	—
Araban ...	25.20	—
Gum arabic ...	16.24	—
Gum tragacanth ...	33.36	—
Apple pectinogen—crude ...	55.16	78.05
Apple pectinogen—purified ...	74.24	105.05

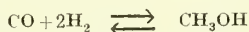
The conditions governing jelly-formation are under investigation. The authors conclude, however, that the basic molecules of pectinogen and pectic acid are identical and can be represented by a hexagonal ring type formula, four out of the six units being galacturonic acid and the remaining two arabinose, galactose or methyl pentose.

Tetra-Ethyl Lead.—In the United States tetra-ethyl lead is added to gasoline together with a volatile "carrier," ethylene dibromide or trichlorethylene, to prevent "knocking" in motor engines. Experiments carried on by Eldridge, of the Chemical Warfare Service, show that tetra-ethyl lead passes readily through the skin and that rapid acute poisoning may follow skin application or the inhalation of fumes. The production of tetra-ethyl lead for commercial purposes resulted in the poisoning of some sixty or seventy men and the death of ten men in a period of thirteen months, ending November 1, 1924. Since then great improvements in equipment have been made, and only two serious cases of poisoning have been reported during 1925. One man died, and one was declared insane in February 1925. In a critical review of this subject, A. Hamilton, P. Reznikoff and G. M. Burnham ("Journal of the American Medical Association," May 16, 1925) express the opinion that the mixing of ethyl fluid with gasoline constitutes a danger, the extent of which is as yet undetermined, to employees of refineries and service stations. The use of gasoline to which ethyl fluid has been added constitutes a probable risk to garage workers and a possible risk to the public of chronic lead poisoning, because the combustion of tetra-ethyl gasoline results in the formation of soluble compounds of lead, the chloride and bromide (as well as the less soluble sulphate), which compounds pass out with the exhaust gases in the form of light and heavy particles. Because of the enormous and increasing use of automobiles, the question of the danger to industrial workers and to the public which is involved in the production and handling of tetra-ethyl lead and the use of ethyl gasoline is of the highest import-

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ance and calls for a study which will be beyond criticism. Such an investigation must include an intensive survey of a selected group of individuals who have already been exposed to the gas, under known and varying calcium diet and varying exposure to sunlight. Their excreta should be analysed for lead. Only in this way can absorption of lead and possible lead poisoning be ruled out.

Industrial Synthesis of Methyl Alcohol.—Charles Lormand, in "Industrial and Engineering Chemistry" for April 1925, p. 430, reviews the situation in regard to the production of methyl alcohol from water gas by catalysis under pressure. Patart, in 1921, patented a process (French patent, No. 540,343) for synthesis of methyl alcohol based upon the idea that the reversible action



would be influenced towards formation of methyl alcohol by increase in pressure. The apparatus required is practically identical with that needed for synthetic production of ammonia. The water-gas mixture (usually 2 vols. of hydrogen and 1 vol. of carbon dioxide) is drawn from gas-holder and compressed in a four-stage compressor to 500 atmospheres. It is then led through a filtering device to an autoclave (with external electric heating), whence the gases pass through two water-cooled coils, the non-condensed portion being circulated. The supposition that copper would be the most active catalyst was contradicted by experience; but oxides of vanadium, chromium and zinc gave the desired result, giving small yield alone, but with considerable increase on admixture with copper. Thus a catalyst containing 50 per cent. metallic copper and 10 per cent. zinc oxide is more effective than zinc oxide alone. The temperature range is about 400° C. The proportion of gas combining at each passage over catalyst is 8 to 10 per cent. The condensed methyl alcohol is free from aldehydes and acetone, and contains about 5 per cent. of water and traces of amines and acids (0.1 to 0.2 per cent.). A cubic metre of carbon monoxide and 2 cubic metres of hydrogen yield 476 grams of methyl alcohol. The composition of the mixture can be varied within wide limits, provided hydrogen is replaced as fast as it is used up. Temperatures above 600° C. bring about formation of methane and increase in yield of higher alcohols, but pressures up to 900 atmospheres are not deleterious. The Badische Anilin and Sodafabrik, in 1923, developed the industrial synthesis of methyl alcohol, claiming that it is necessary to use purified gases, a contention with which Patart disagrees, as he has never been able to detect a diminution in yield which could be ascribed to poisoning of the catalyst when using only slight purified water-gas. The synthesis of methyl alcohol on a commercial scale should be less difficult than that of ammonia, as the raw materials, water-gas and hydrogen, are easily obtainable. The Badische plant at Merseberg was producing 10 to 20 tons of methyl alcohol per day in 1923. The cost of production is roughly 1s. per gallon, which is about one-quarter of the current market value.

Evaluation of Sodium Bisulphite.—J. B. P. Harrison and M. F. Carroll ("Journal of the Society of Chemical Industry," March 20, 1925) point out that commercial sodium bisulphite, which is invariably sold on the basis of its sulphur dioxide content, is liable to deteriorate; but, unfortunately, there is at present considerable lack of agreement as to the true composition and most reliable method of determining actual bisulphite. The authors find that oxidation of bisulphite to bisulphate (with hydrogen peroxide) and titration of acidity gives accurate results, and the following is the method they adopt for the evaluation of commercial sodium bisulphite:—

Total Sulphur Dioxide.—About 0.25 gm. dropped gently into a large beaker containing 50 c.c. N/10 iodine solution and 500 c.c. of distilled water. After stirring until bisulphite is completely dissolved, the

unabsorbed iodine is titrated with N/10 sodium thio-sulphate solution.

Sulphur Dioxide Existing as Metabisulphite.—Exactly 10 c.c. of hydrogen peroxide (20 vols.) is added to each of three flasks containing 50 c.c. of distilled water and 0.5 c.c. of methyl orange indicator solution (6.2 per cent.). If solution is acid, colour is adjusted by N/5 NaOH until only a faint red tint is visible. About 1 gram of sample is weighed out quickly and transferred to the flask with the addition of a few c.c. of water. This operation is repeated with a second flask. The flasks are then shaken and cooled if necessary. About 50 c.c. of distilled water is added to the flask representing the blank experiment, and titration of the two flasks containing bisulphite with N/5 NaOH is continued until the tint of the indicator is alike in all three flasks (values in duplicate should not differ by more than 2 per cent.). Sodium sulphate is determined as barium sulphate in 2 to 3 grams of sample boiled in water, acidified with hydrochloric acid, until all sulphur dioxide has been driven off, before proceeding to precipitation with barium chloride in the usual way. Analyses of five samples of commercial bisulphite gave the following results:—

	A	B	C	D	E
Per cent. total SO ₂ ..	65.78	65.45	64.95	57.83	63.40
Per cent. SO ₂ existing as metabisulphite ..	64.15	63.62	62.54	53.05	60.42

The determined amount of sulphate and calculated amounts of metabisulphite and normal sulphate were as follows:—

	A	B	C	D	E
Sodium metabisulphate, Na ₂ S ₂ O ₅ ..	95.23	94.45	92.86	78.76	89.69
Sodium sulphite, Na ₂ SO ₃ ..	3.21	3.60	4.75	9.41	5.87
Sodium sulphate, Na ₂ SO ₄ ..	1.61	1.91	2.41	9.82	4.12
	100.05	99.96	100.02	97.99	99.68

The assumption that commercial bisulphite contains sodium hydrogen sulphite is incompatible with the results of analysis. The stability of sodium metabisulphite would appear to depend upon crystalline structure and freedom from moisture.

PURE CHEMISTRY AND PHYSICS

Two New Elements.—At the meeting of the Prussian Academy of Sciences of June 15, Professor W. Nernst reported the discovery, by Dr. W. Nannack, Dr. O. Berg, and Dr. Ida Tacke, of two new elements which have been named "masurium" and "rhenium."

Atomic Synthesis.—Sir Ernest Rutherford, in a letter to "Nature" (April 4, 1925), records observations by Mr. Blackett, of the Cavendish Laboratory (published in the "Proceedings of the Royal Society," 107, p. 349), indicating the possibility of the formation of oxygen from nitrogen. Photographs of tracks of collisions of a particles with the nucleus of the nitrogen atom did not behave normally in eight cases, in that there was no sign of the track of an escaping a particle. In the eight forks, the fine track of the proton was clearly visible, and also that of the recoiling nucleus. Blackett concludes that under these conditions the a particle is captured by the nitrogen nucleus, which in consequence has a mass 17 and charge 8, and is thus an isotope of oxygen.

Periodicity between Electrical and Chemical Effects.—E. S. Hedges and J. K. Myers ("Journal of the Chemical Society," May 1925) describe some new periodic reactions, including the alternate formation and dissolution of a metallic film accompanied by corresponding oscillation in electro-potential and gas evolution. The series of changes during solution of copper (activated by cold rolling) in nitro-hydrochloric acid (25 c.c. nitric acid (sp. gr., 1.42), 10 c.c. hydrochloric acid (sp. gr., 1.16), and 65 c.c. of water) is most striking. Initially the surface preserves its natural colour; then there is the sudden appearance of a black film deposited in

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vertical streaks; the black film next turns dull grey, and is followed by a sudden flash to white, when it dissolves, leaving the metal its original colour, when the cycle is again repeated. Regular wave representing electro-potential and gas evolution accompanied the cycles of visible changes

International Atomic Weights, 1925.—The second report of the International Committee on Chemical Elements appears in the "Journal of the American Chemical Society" (March 1925, p. 597), and in the "Journal of the Chemical Society" (April 1925, p. 913). The primary standard is, as usual, $O = 16.000$. The new international table of atomic weights differs in giving the atomic (or Moseley) numbers of the elements. The atomic weights are given with one uncertain decimal place (except in the case of hydrogen), and the use of the complete values is recommended for analytical commercial purposes "in order to avoid conflicting reports from different analysts." In accordance with this principle twenty-three elements are expressed to one more decimal place than previously, while the atomic weights of twenty-four others have been revised. Element No. 72, Hafnium or Celtium, atomic wt. 180.8, is omitted. The complete table is as follows:—

INTERNATIONAL TABLE OF ATOMIC WEIGHTS OF THE
CHEMICAL ELEMENTS

1925

	Symbol	Atomic number	Atomic weight
Aluminum	Al	13	26.97
Antimony	Sb	51	121.77
Argon	Ar	18	39.91
Arsenic	As	33	74.96
Barium	Ba	56	137.37
Beryllium	Be	4	9.02
Bismuth	Bi	83	209.00
Boron	B	5	10.82
Bromine	Br	35	79.916
Cadmium	Cd	48	112.41
Cesium	Cs	55	132.81
Calcium	Ca	20	40.07
Carbon	C	6	12.000
Cerium	Ce	58	140.25
Chlorine	Cl	17	35.457
Chromium	Cr	24	52.01
Cobalt	Co	27	58.94
Columbium	Cb	41	93.1
Copper	Cu	29	63.57
Dysprosium	Dy	66	162.52
Erbium	Er	68	167.7
Euroium	Eu	63	152.0
Fluorine	F	9	19.00
Gadolinium	Gd	64	157.26
Gallium	Ga	31	69.72
Germanium	Ge	32	72.60
Gold	Au	79	197.2
Helium	He	2	4.00
Holmium	Ho	67	163.4
Hydrogen	H	1	1.008
Indium	In	49	114.8
Iodine	I	53	126.932
Iridium	Ir	77	193.1
Iron	Fe	26	55.84
Krypton	Kr	36	82.9
Lanthanum	La	57	138.90
Lead	Pb	82	207.20
Lithium	Li	3	6.940
Lutecium	Lu	71	175.0
Magnesium	Mg	12	24.32
Manganese	Mn	25	54.93
Mercury	Hg	80	200.61

Law of Entire Equilibrium.—Under the title of a "New Principle of Equilibrium," Professor G. N. Lewis, of the University of California, demonstrates in the "Proceedings of the National Academy of Sciences of the United States of America" (March 1925) the non-existence of cyclic equilibrium and formulates a new "Law of Entire Equilibrium" as follows: "Corresponding to every individual process there is a reverse process, and in a state of equilibrium the average rate of every process is equal to the average rate of its reverse process." It is added that this law of equilibrium might be called the law of reversibility to its last detail, and that in any system at equilibrium time must

lose the unidirectional character which plays so important a part in the development of a time concept, as in a state of equilibrium there is no difference between backward and forward direction in time, or, in other words, there is complete symmetry with respect to past and future. One of the first applications promised by Lewis will be to the interaction of light and matter and an attempt to demonstrate the invalidity of Einstein's derivation of Planck's radiation formula, while with Dr. D. F. Smith he will apply the law to mechanism of chemical reactions. [A "hitherto unwritten conception," "The Equilibration of Energy," was announced by W. A. Whatmough in THE CHEMIST AND DRUGGIST, February 7, p. 187, while in the same series of articles (C. & D. for March 21) it is stated that "time can stand still as regards relative motion." Thus practically simultaneous publication took place in the Old and New World of two fundamental principles: complete equilibrium and motionless time.—EDITOR.]

DENTISTRY

General Anæsthesia.—W. Guy ("British Dental Journal," I, 1925, p. 440) regards nitrous oxide, oxygen and ethyl chloride as the anæsthetic of choice for nearly all dental operations, with the proviso that the dose of ethyl chloride must never exceed 3 c.c., and that it is administered as a single-dose anæsthetic. The author condemns the use of any single agent as an anæsthetic, and believes that the best results with the maximum degree of safety for the patient and comfort for the operator are obtained with the following:—(1) For short operations, thirty to sixty seconds, e.g., extraction of one or two teeth: gas and oxygen, or gas and oxygen with 1 to 2 c.c. of ethyl chloride; (2) for rather longer operations, e.g., extraction of a number of teeth: gas and oxygen with 2 to 3 c.c. of ethyl chloride; (3) for longer and more difficult operations, ninety to one hundred and fifty seconds: gas and oxygen with 3 c.c. of ethyl chloride and 3 c.c. of ether; (4) for operations likely to occupy ten minutes or longer: gas and oxygen and ether.

Acriviolet.—A. A. Moore ("Dental Cosmos," I, 1925, p. 501) describes acriviolet as the nearest approach to an ideal mouth antiseptic. A mixture of equal parts of acriflavine and gentian violet, for use in the mouth a one per cent. solution in distilled water is recommended. This should be stored in highly stoppered amber bottles and away from direct sunlight. It can be used freely about the mouth in preparing the field of operation and for sterilising tissue for injection. It is useful in the treatment of gingivitis, pyorrhœa, Vincent's angina, wounds, either soft tissue or bone, abscess cavities and antrums. The chief objection to acriviolet is its staining property. To offset this, it is well to grease the patient's lips and chin if any appreciable quantity of the dye is used. However, its effect is transitory in the mouth, neither teeth nor synthetic fillings being stained permanently. Pain may be produced if the mixture is used in a closed cavity, due to the local action of gentian violet. Another objection is that the mixture is light-sensitive and rather unstable chemically.

Inlay Waxes and Investing Compounds.—S. J. F. Webb ("British Dental Journal," I, 1925, p. 511), who has conducted many experiments with a view of obtaining a formula for an inlay wax which could be made cheaply and easily by any dentist, finds the following gives satisfactory results:—

Gum damar	...	...	...	...	...	3
Carnauba wax	...	...	...	...	...	4
Yellow beeswax	...	...	...	...	...	1
Japan wax	...	...	...	...	...	1
Ceresin	...	...	...	...	...	4
Paraffin (132° F.)	...	...	...	...	...	4

The ingredients are melted and mixed in the order given and a suitable dye, oil-soluble blue or green, added. White carnauba wax will not dissolve gum damar

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as the grey variety will. The white wax gives smooth working qualities, and used in suitable proportion is a valuable ingredient. Gum damar confers toughness and should have a melting point about 157° F. Another formula is as follows:—

Gum damar	...	...	...	...	...	3
Carnauba wax, grey	...	...	...	...	...	2
Carnauba wax, white	...	...	...	...	...	3
Yellow beeswax	...	...	...	...	...	1
Ceresin	...	...	...	...	...	4
Paraffin (132° F.)	...	...	...	...	...	2

A sign of a good working wax is that the surface is distinctly shiny. Investing compounds are divided roughly into non-plaster investments and those containing plaster of Paris. A suitable investment can be made up of:—

Fine silica	...	...	...	...	...	2½ part
Graphite	...	...	...	...	...	½ part
Kaolin	...	...	...	...	...	1½ part

Fireclay cupels can be made as follows:—

Fireclay	...	...	...	...	...	1 part by bulk
Sawdust	...	...	...	...	...	3 to 4 parts

The fireclay is mixed with silicate of soda and the sawdust is then added. After intimate admixture the cupels are moulded, carefully dried and burned. As regards investing materials containing plaster of Paris, using a coarse silica which apparently consisted of quartz and mica, a mixture of silica 2 and plaster of Paris 1 gave an investment that stood the pressure of large castings. An inlay should be invested at a temperature of 110° F. The investment should be weighed and a definite known quantity of water added, the quantities recommended being 1½ oz. investment to ½ fluid oz. water. An hour should elapse between the time of investment and the commencement of heating for removal of the wax.

ESSENTIAL OILS

Bornyl iodide.—Two optically active bornyl iodides were obtained by J. Maizits ("Latvijas Farmaceutu Zurnals," April 25, 1925) from the reaction products of hydriodic acid on the pinenes of French and Greek oil of turpentine: *l*-bornyl iodide, $d_{22.5} = 1.460$; $\alpha_D = -16^\circ 6'$; $[\alpha]_{D_{22.5}} = -44.109^\circ$; $n_D = 1.548291$, from French oil; and from Greek oil, *d*-bornyl iodide, $d_{22} = 1.460$; $\alpha_D = +15^\circ 34'$; $[\alpha]_{D_{22}} = +42.191^\circ$; $n_D = 1.548291$. On reduction with zinc dust in the presence of alcohol and water both isomers yield optically inactive camphane.

Essential Oil of Dacrydium Cupressinum.—McDowall and Finlay ("Journal of the Society of Chemical Industry," 1924, 42 T.) have examined the essential oil of this plant, which grows freely in New Zealand. The leaves on distillation with superheated steam yield 0.17 per cent. of oil containing a five-ringed diterpene $C_{20}H_{32}$, which melts at 55-56°, boils at 320°, and has a specific rotation in chloroform solution +53.7°. It also contains a sesquiterpene boiling at about 155° at 40 mm.; refractive index 1.5005; specific gravity at 20°, 0.9219; and specific rotation in chloroform, +17.8°. No aldehydes nor ketones were found.

Essential Oil Analysis.—A rapid and simple method of determining the phenol content of essential oils is described by L. Reti ("Chemiker-Zeitung," April 7, 1925), with the aid of an apparatus similar in construction to Gerber's butyrometre. To carry out the test, 1 c.c. of oil is pipetted into the "phenolometre," and sufficient dilute solution of sodium hydroxide is added to cause the upper layer of the liquid to reach the scale on reversing the apparatus. The latter is closed by means of a rubber stopper and carefully shaken, whereupon it is centrifuged for three minutes. The non-phenolic constituents collect in the part provided with a scale, from which the result can be read.

A New Menthone Compound.—Samdahl ("Journal de Pharmacie et de Chimie," 1925, I, 145) has prepared a

compound of menthone with toluic aldehyde by passing dry hydrochloric acid gas through a mixture of the two bodies in equimolecular proportions at 0°. This results in *para*-tolylidenementhone hydrochloride, a crystalline compound melting at 133°, and of specific rotation in chloroform -83.1° . On decomposition with alcoholic potash solution, the free keto compound is obtained. *Para*-tolylidenementhone $C_{14}H_{16}(C)(CO)CH_3.C_6H_4.CH_3$ is a crystalline compound melting at 77°, and of specific rotation in chloroform -193.2° . By reduction by means of sodium and moist ether, it yields *p*-methyl-benzylmenthol, melting at 150°.

Oil of Boronia Sapprolifera.—Penfold ("Journal of the Proceedings of the Royal Society of New South Wales," LVIII, 230) describes the essential oil of this Australian plant, which is a small shrub, with pretty, pink flowers, found in the swampy country at Broadwater, Richmond River, N.S.W. The yield of essential oil from the leaves and terminal branchlets of the plant was 1.45 per cent. The oil is of a yellow colour, and was found to contain about 70 to 75 per cent. of safrol, methyl-eugenol *d*-apinene, a phenol and a paraffin hydrocarbon. The oil separated into a light portion which floated on the distillation water, and a heavy portion which sank. These oils, and the total oil, had the following characters:—

	Total oil	Light oil	Heavy oil
Percentage ..	1.45	0.26	1.19
Specific gravity ..	1.034	0.9805	1.045
Rotation ..	+3.79°	+5.42°	+3.42°
Refractive index ..	1.5180	1.5016	1.5216

Sicilian Eucalyptus Oil.—R. Invidiato ("Bollettino Chimico-Farmaceutico," April 15, 1925) investigated two specimens of the oil distilled from leaves of *Eucalyptus globulus* grown in Sicily, where it is being extensively planted as a measure to combat malaria, on account of its property of absorbing large quantities of water from the soil. The first specimen was obtained from leaves collected in April 1924 at the close of the flowering period, and the second from leaves collected in December, 1924, at the commencement of flowering. The two oils presented the following characters:—

	April, 1924	December, 1924
Specific gravity at 15°	0.9235	0.9268
Optical rotation ..	+1.52° (at 13.5°)	+1.08° (at 12.5°)
Refractive index ..	1.415	1.423
Acid number ..	1.53	1.2
Ester value ..	18.3	8.8
Percentage of esters	6.41	3.08
Ester value after acetylation ..	50	39.1
Free alcohols ..	14.3%	7.99%
Total alcohols ..	19.33%	10.41%
Cineol content ..	36.17%	52.32%

The author expresses the opinion that Sicilian eucalyptus oil obtained from leaves during the flowering period can compete with the Australian oil in regard to its industrial and therapeutic applications.

Manufacture of Iso-Eugenol.—A comparative study of the various methods in use for the isomerisation of eugenol on a manufacturing scale induced J. McLang ("Chemische Rundschau für Mittel-Europa und den Balkan," March 22, 1925) to adopt the following procedure:—2,400 grams of potassium hydroxide in sticks, previously purified with alcohol, 150 grams of distilled water, and 1,620 grams of pure eugenol are introduced into an iron container provided with a mixer, and the contents are heated to 250°, whereupon the reaction mass is added in portions to 15 kilos of water. The resulting solution of iso-eugenol potassium is cooled to 20°, 3,250 grams of benzol is added, and the whole well mixed for two hours, whereupon the exact amount of sulphuric acid (35 per cent.) required for neutralisation is introduced, maintaining the temperature of the mixture at 20°-23°. After standing for several hours, extraction is completed with benzol, and the united benzol solutions

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are then distilled *in vacuo* at a temperature of 140°. The author states that to obtain the best results it is imperative to withdraw the iso-eugenol potassium as soon as it is formed from the influence of heat and oxygen, as these factors tend to cause resinification of the product.

FIXED OILS AND FATS

Bellier's Modified Test for Arachis Oil.—F. F. Shelley ("Analyst," April, 1925) calls the attention of analysts to the fact that imported olive oil is now frequently condemned as containing 5 per cent. of arachis oil. This is owing to the oil giving a positive result when using a rapid modification of Bellier's test in which 1.5 c.c. of Adler's acetic acid solution is added to the saponified oil, and hydrochloric acid is omitted from the alcohol. No turbidity results, however, with Luer's modification of the test where 3 drops of glacial acetic acid are added to the saponified product. In the author's experience, it is unsafe to base judgment on a turbidity at 16°, whereas cloudiness or a precipitate at 17° is indicative of the presence of arachis oil.

Cod-Liver Oil Concentrate.—By means of acid extraction followed by saponification, H. E. Dubin and C. Funk ("Journal of Metabolic Research," November-December 1924) prepared a concentrate from cod-liver oil which in the crude state is 2,000 times more active than fresh cod-liver oil, as regards both the antirachitic and the antiophthalmic vitamins. Thus, 1,000 grams of fresh cod-liver oil yields 0.5 gram of crude active concentrate, a brown, syrupy mass which, on standing, crystallises in light yellowish-brown needle-like crystals, radiating from a central point. On the elimination of cholesterol, the 0.5 gram concentrate is reduced to 0.1 gram, a concentration of 1 in 10,000. Working with great care, it is possible to obtain a concentration of 1 in 15,000. Although the chemical composition of the concentrate has not been established as yet, the presence of carbon, hydrogen and oxygen has been demonstrated. Sodium, sulphur and phosphorus are absent, as are also the halogens. The sulphuric acid reaction is obtained just as with fresh cod-liver oil. The concentrate is not toxic, even in very large doses. It may be mixed with sugar and compressed into 1-grain tablets equivalent to practically any desired dosage of cod-liver oil. This offers an effective method of cod-liver oil therapy, whether experimental or practical. Clinical experiments have shown that the concentrate is as effective in children as in animals. The authors believe that infants, as early as one month after birth, should be given cod-liver oil if it can be tolerated; if not, the child should receive the equivalent of cod-liver oil in the form of a concentrate, as a prophylactic against rickets and other nutritive disturbances traceable to the lack of fat-soluble vitamins in the diet.

MATERIA MEDICA

Muscas.—A sample of a consignment imported from Mexico and designated as "muscas" was analysed by E. Pfau ("Apotheker-Zeitung," May 27, 1925) to ascertain its content of cantharidin, as some had been sold as "muscae hispanicae." No cantharidin was found, and on examination the insects proved to be a water beetle of the genus *Notonecta*. Further inquiry elicited the fact that this consignment was intended for use as a bird and fish food.

Resin from Pinus longifolia.—M. S. Rau and J. L. Simonsen ("Indian Forest Records," 1924, vi) report on the identity of the principal acid constituent of the resin of *Pinus longifolia*. This is definitely established to be abietic acid, identical in all respects with the acid present in the resin of *P. palustris*. The identity of the two acids was confirmed by the preparation of derivatives, some of which appear to be new, comprising a dihydrochloride m.p. 205°, a monohydrochloride m.p. 197°, a monohydroxy m.p. 230°, and a dimolecular hydrochloride decomposing at about 310°.

Diphenic Acid Derivatives as Local Anæsthetics.—R. C. Roberts and T. B. Johnson ("Journal of the American Chemical Society," May, 1925, p. 1396). Diphenyl chloride reacts smoothly with diethyl-amino-ethyl alcohol ($C_2H_5)_2NCH_2CH_2OH$ to form the corresponding ester, while the imido ester is obtained with the imide chloride of diphenanilide. The imido-ester grouping possesses much greater local anæsthetic action than the plain diethyl-amino-ethyl ester of diphenic acid. The results are interesting in view of the structural relationship of novocaine (diethyl-amino-ethyl alcohol ester of 4-7 diamino-diphenic acid).

Cultivation of Datura.—As a suitable material for the extraction of mydriatic alkaloids, B. Pater ("Pharmazeutische Monatshefte," No. 2, 1925) advocates the cultivation of *Datura Tatula* in the place of *Datura Stramonium*. As a result of his experiments, the author established that the leaves of the former plant contain 0.318 per cent. of alkaloid; further, the stem is particularly rich in alkaloids, the following amounts being found:—Stem, 0.385; root, 0.12; unripe seeds, 0.048; capsules, 0.182 per cent. For manufacturing purposes Pater recommends that the entire plant should be collected and used.

Atractylis Gummifera.—Referring to recent investigations into the use of the juice of *Atractylis gummifera*, Linn. (masticogna), as an adulterant of liquorice, E. Emmanuel ("Schweizerische Apotheker-Zeitung," April 25, 1925) mentions that a decoction of the root of this plant is commonly used among the peasants in Greece to promote the growth of hair, and numerous cases of poisoning have been reported, caused by persons drinking the decoction. Its use has also been recommended by ignorant persons to allay cough, and several fatal cases among children have occurred as a result of partaking of an electuary made from the fleshy root. The author reports that a herbalist was found to be supplying atractylis root at a low price to grocers in the place of soapwort root.

Ma Huang.—K. K. Chen gives in the "Journal of the American Pharmaceutical Association" (March 1925) pharmacognostic details of *Ephedra vulgaris*, var. *helvetica*, Gnetaceæ, sold in Chinese drug stores in the form of dried greenish sticks, 1 to 1.5 cm. long. The plant is a low shrub (60 to 90 cm. high) with practically leafless, slender green stem (1.5 mm. in diameter), which is somewhat ribbed and channelled and usually terminates in a sharp point. The nodes, bearing whitish, triangular, scarious leaf sheaths, are 4 to 6 centimetres apart. The plant contains the alkaloid ephedrine, probably $C_8H_{13}OH \cdot CH \cdot CH \cdot CH_3 \cdot NH \cdot CH_3$, which would appear to be of considerable value as a stimulant to circulation owing to its similarity in action to adrenalin. The alkaloidal content is small and varies considerably (0.18 to 0.90 in the samples tested).

Strophanthus Letei.—The bark of the roots and stems of *Strophanthus letei*, Merrill, was found by A. H. Wells and F. Garcia ("Philippine Journal of Science," January 1925) to contain a saponin to the extent of 2.1 per cent. for the former and 0.9 per cent. for the latter. The compound is somewhat similar to pseudostrophanthin, but does not give the tests for true strophanthin. This saponin, in the form of an amorphous, brown powder, is easily extracted by water and purified by the lead acetate method combined with repeated precipitations with ether. The amorphous powder slows the heart beat, increases the tone, and augments the heart contraction. The drug raises the blood pressure in animals, the rise lasting about thirty minutes. The depth and rate of respiration are increased by a large dose of the drug. All the effects mentioned are obtained by subcutaneous, intramuscular and intravenous injection. By mouth, the drug produces emesis a few minutes after administration. By the use of the biological assay cat method the powder was found to possess one-twentieth the strength of ouabain.

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Tragacanth Test.—Since tragacanth is chiefly used as an emulsifying agent, W. Peyer ("Apotheker-Zeitung," April 18, 1925) draws attention to the importance of establishing the viscosity of its solutions, and as the result of exhaustive investigations in this direction, he recommends the following test:—A mixture of 1 gram of tragacanth, 2 c.c. of alcohol, and 97 grams of water is frequently shaken during a period of twenty-four hours, whereupon the mucilage is passed through a small sieve, to remove foreign matter and render it homogeneous. It is then introduced into a viscosimetre, and the number of drops determined which are discharged within two minutes. The author was able to apply this test to 49 different specimens of tragacanth, the number of drops varying from 370 to 2, and suggests as a standard for the official drug that when using the above concentration not more than 30 drops should be discharged in the space of two minutes.

Miré has been investigated anatomically by H. W. Youngken ("Journal of the American Pharmaceutical Association," XIV, No. 3, p. 195), the material consisting of about 3 lb. of dried aerial stems and rhizomes collected by Dr. E. O. White, of the Mulford Biological Exploration Party, in the vicinity of Huachi, Bolivia. Comparison with material in the Gray Herbarium of Harvard University shows miré to be derived from *Brunfelsia hydnangiformis*, Pohl. The natives use the plant as a muscular paralyzant and for treatment of cutaneous parasites. The cylindrical rhizome is occasionally tortuous and furcate, being up to 32 cm. long and 1.5 to 2 cm. thick. Externally the colour is light to reddish-brown and the bark is striated or wrinkled longitudinally. Internally with very thin bark and broad, dense, yellow-brown wood. Taste, sweetish, followed by tingling sensation and numbness. The simple and alternate leaves (up to 18 cm. long and 5.8 cm. wide) are oblong-lanceolate to elliptic oblong, with entire margin and acuminate apex. They are glabrous on both surfaces. The petiole is up to 8 mm. long.

Yajeine.—Professor A. M. Barriga Villalba ("Journal of the Society of Chemical Industry," May 1, 1925) describes a new alkaloid from the plant called Yaje by the inhabitants of the Colombian territories of the Putumayo and Caqueta rivers. According to Dr. Reimburg, Yaje appears to correspond to *Hamadityen Amazonicum*, Apocynaceae. The Indians prepare a liquid extract (by infusion and concentration) from the stems of the plant and take doses corresponding to approximately 0.5 gram of alkaloid. Under its influence they make a great uproar, jumping, screaming and running about wildly, taking fresh potions as the effect abates, and thereby keeping up their orgy for days. The plant is a rather leafless shrub (extreme height, 3 to 4 metres), usually attached to the trunks of neighbouring trees. On extracting the dried stems two alkaloids, yajeine (1.5 per cent.) and yajenine (0.025 per cent.) were obtained. Yajeine, melting at 206° C., corresponds in composition to $C_{14}H_{16}N_2O$, and some of its reactions point to the presence of a pyrrole nucleus. The toxic dose is 0.2 gram per kilogram of body weight. Deep and general anaesthesia is present and convulsions occur with large doses. Small doses with humans produce deep sleep and a sensation of well-being.

Surinam Balsam of Peru.—E. Hollman and P. van der Wielen ("Pharmaceutisch Weekblad," May 30, 1925) analysed a sample of balsam of Peru obtained from trees cultivated in Dutch Guiana. Its colour was a dark reddish-brown; it did not adhere to the fingers and could not be drawn out into strands, being much less viscous than the usual commercial products. On the other hand, it had a more pronounced aromatic odour, recalling that of storax. Specific gravity at 15° was 1.1285; on heating the balsam on the water bath it lost 21.5 per cent. in weight at the end of five hours, and on cooling crystalline needles separated out. The acid

number was determined by three methods and yielded the following figures: 40.32 (van Itallie and van Eerde); 72.4 (Dieterich), and 65.14 according to the authors' method, which was based on titrating the free acids present in the ethereal residue remaining after determining the content of resinous esters. Saponification number, 165.7; ester index, 93.3; cinnamein content, 46.1 per cent.; refractive index at 40°, 1.5590. These results show that in its characters this balsam differs appreciably from genuine balsam of Peru. These divergences can only in part be explained by the presence of water and of other volatile substances, since the high acid number and the separation of crystals of cinnamic acid are special features which distinguish it from other varieties of balsam of Peru.

Tang-kuei.—Tang-kuei is the Chinese name for the root of *Angelica polymorpha* var. *sinensis*, which occurs more frequently in Chinese prescriptions than any other drug, except liquorice. For centuries it has been regarded as a valuable remedy in the treatment of menstrual disorders and of sterility in women, besides being widely used in a variety of other conditions. It was introduced into Western medicine in 1899 by E. Merck, in the form of a liquid extract issued under the name of eumenol, and later in the form of tablets. The plant belongs to the parsley family, but so far investigators have failed to isolate any active principle, and its properties have hitherto been ascribed to its volatile oil. Experiments undertaken by C. F. Schmidt, B. E. Read and K. K. Chen ("The China Medical Journal," May, 1924) showed that the drug produces circulatory depression, due to direct action on the heart; in addition, it causes contraction of smooth muscle, as well as diuresis, the latter effect being largely attributable to its high sugar content—nearly 40 per cent. Attempts to isolate the active principles were not entirely successful, although the authors succeeded in obtaining a small amount of a crystalline substance apparently responsible for the drug's action on smooth muscle. The authors express the view that the effects of the drug are so variable, and the conditions responsible for the variations so obscure, that it is impossible to state what use may be made of it in rational therapeutics. As a whole, the effects suggest those of pituitary extract, but are less constant and dependable, since extracts made from the same drug under as nearly constant conditions as possible may vary widely in their physiological effects.

MEDICINE

Sex Determination.—Dr. F. A. E. Crew, in a review of this subject ("Nature," April 18, 1925), points out that the sexes can be distinguished by differences in the chromosome constitution of the cells of which the individual is built up. The chromosome picture is similar in both sexes, with the exception of one pair, which in one sex consists of equal mates or X chromosomes, but in the other (male) there is only one X chromosome; the other, or Y, chromosome is unequal or absent, so that the male is $X1$ or $X0$. In the mammal the male elaborates two kinds of gametes; in birds it is the female that is di-gametic. Thus a mammal from union of XX gametes is a predetermined female, whilst an XY individual is a predetermined male. The reverse is the case in birds. The moment at which the sex is determined is the fertilisation of the egg.

Dosage of Veronal.—G. Archdall Reid ("British Medical Journal," I, 1925, 633) suggests that patients should always be informed of the delayed action of veronal, and that a label be affixed to every packet affirming the uselessness of veronal as a quick remedy for wakefulness. A patient who, during an attack of insomnia, took ten grains at bedtime was wakeful that night, but "deadly drowsy" next day. The following night he took fifteen grains. Again he was wakeful; but in the afternoon slumbered so profoundly at his club that the attendants had difficulty in rousing him. On a later occasion, when

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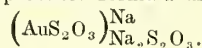
ignorant of the remedy applied, he was given five grains in the early evening. He described himself as getting "a heavenly night," but as being too sleepy in the morning. Thereupon he was given two and a-half grains, also in the evening. Now he had "perfectly natural sleep," with no apparent drowsiness till he went to bed, and none after he rose. He was then told the facts, and informed that the fit of insomnia was probably broken, which proved to be the case. He still takes veronal, but rarely, and never in more than $2\frac{1}{2}$ -grain doses.

Treatment of Psoriasis.—J. B. Mackay ("British Medical Journal," I, 1925, 722) describes a combined treatment for psoriasis which he believes is not only effective but simple. All possible sources of infection must first be carefully eliminated. The original source of the disease has been traced in several cases directly to oral sepsis, and this should be removed. The treatment consists of four concurrent procedures, the most important of which is a series of intramuscular protein injections. Abbott's "lactigen," commencing with 5 c.c. and gradually increasing the subsequent doses to 10 or even 15 c.c., has been used throughout. The injections are given every three or four days, the rate of increase being determined by the amount of reaction. Usually six injections are sufficient, and, within reasonable limits, the more definite the reaction is the better are the results. A rise of temperature to 101° or 102° F. during the night following the injection is desirable. An ointment containing chrysarobin is applied daily to each patch (chrysarobin gr. xx., liq. carb. deterg. m xxx, ung. hydrarg. ammon. chlor. 5ij., petrolati ad 5j.). It is essential that this should be rubbed in; any irritation of the surrounding skin can usually be relieved with talcum powder. Once a week a hot bath is taken, after which the exact state of the lesions can be readily seen. Internally thymus gland in 5-grain capsules, three or four times a day, is prescribed. If preferred it may be given by intramuscular injection, or the same effect may be produced by stimulating the thymus with small doses of x rays. Without thymus medication the same steady improvement is not seen: the healing process is more irregular and the results less satisfactory. Lastly, a low protein diet will hasten results; it should be maintained after cure. The average length of time for the disappearance of all lesions and the return of the skin to normal has been five weeks.

The Chemotherapeutic Treatment of Gonorrhœa. J. E. R. McDonagh ("British Medical Journal," I, 1925, 624) points out that, in gonococcal affections, metallic preparations appear to act by increasing the number of the protein particles constituting the defence, thereby augmenting the area exposed to the bacteria. Hydrogen and sodium atoms may promote this change even more effectually than manganese, provided they are liberated from a sufficiently large molecule. Moreover, such atoms are less liable to destroy the host's protective substance and to produce metallic intoxication. Therefore, the ground last covered has been in this direction, and the present paper marks the introduction of two further drugs: (1) the symmetrical urea of meta-benzoyl-meta-amino-benzoyl-amino-naphthol-3-6-sodium sulphate, or "sum 36" for short; (2) the symmetrical urea of para-benzoyl-para-amino-benzoyl-amino-naphthol-3-6-sodium sulphate, or "sup 36." The former is to be preferred in pure gonococcal infections, and the latter in the complications arising from the supervision of Gram-positive cocci. Both drugs were made by Mr. T. H. Fairbrother, of the British Dyestuffs Corporation, Ltd. They have been in use since the latter part of 1923, and the conclusions arrived at are derived from the treatment of several hundred cases. In the male two intramuscular injections of "sum 36," each of 0.002 gm., should be made at five days' interval. In the female it is better to inject 0.01 gm. intravenously. The two injections should be followed by a course of vaccines. In most cases of fresh infection this treatment suffices. Any recurrence of an acute discharge can be stopped by two further injections of the urea compound. Provided the patient is not on the point of developing an

acute posterior urethritis or an acute cervicitis when the first injection is made, no complication need be expected. The immediate effect of this drug in acute gonorrhœa is disappearance of the subjective symptoms and lessening of the discharge.

Sanocrysin Treatment of Tuberculosis.—Holgar Moellgaard, in describing the theoretical basis of his sanocrysin treatment of tuberculosis ("British Medical Journal," I, 1925, p. 643) (see also *C. & D.*, March 28, p. 460), gives the probable formula as follows:—



In watery solution it dissociates according to the equation: $\text{Au}(\text{S}_2\text{O}_3)_2\text{Na}_3 = \text{AuS}_2\text{O}_3 + \text{S}_2\text{O}_3 + 3\text{Na}$. Its therapeutic agent is then the complex negatively charged ion AuS_2O_3 . This ion has, according to his investigations, the following properties:—

(1) Is easily soluble in water (1 gram in 2 c.c. water). (2) Is a real complex and of great stability. Au is not generated by the usually employed strong reducing agents: H_2SO_4 , SO_2 , SnCl_2 , $\text{H}_2\text{C}_2\text{O}_4$, KI do not affect the substance even at boiling temperature. Dilute hydrochloric acid does not affect it at ordinary temperature. H_2S decomposes the ion yielding gold sulphate. Highly concentrated watery solutions decompose slowly, especially in daylight, developing a yellow colour. Diluted solutions are unaltered in about fourteen days, when kept in a dark room. (3) Is rapidly diffusible. The diffusion velocity of AuS_2O_3 —through animal membranes is about 75 per cent. of the diffusion velocity of I—. (4) Remains in the body for four to six days after injection into the blood. (5) Is partly decomposed in the organism, evidently yielding metallic gold, and partly excreted, principally by the kidneys in complex condition. When the urine contains gold it is not found in ionogenic form. H_2O_2 in alkaline solution decomposes the substance at 100° C. totally into gold and Na_2SO_4 . (6) Does not precipitate proteins, especially not the proteins of calf or horse serum, at a temperature of 38° to 40° C. (7) Penetrates the lipid system of the tubercle bacilli in a very short time, affecting the acid-fastness very gravely and carrying gold into the body of the bacilli in amounts which after a short time can be shown by microchemical reaction. (8) Prevents the growth of tubercle bacilli in culture. On the medium used, and which contained no peptone, the author found the growth-limiting concentration to be 1 in 100,000. This value may, however, probably be altered on media of other composition. Especially it must be kept in mind that all media containing H_2S will decompose the sanocrysin and precipitate the gold as gold sulphate and metallic gold. In such media the growth-preventing concentration will increase; the question of growth-preventing properties is, however, of very small importance in chemotherapy. Dioxidiaminoarsenobenzol does not kill spirilli *in vitro* and is yet one of our strongest chemotherapeutic agents.

A preliminary report on the gold treatment of tuberculosis has been issued by the Medical Research Council, London. The total number of cases covered by this preliminary report is about thirty, and the evidence, despite relatively poor results in open pulmonary tuberculosis (unhappily, the commonest form of tuberculosis), is sufficiently encouraging to demand further clinical study. This is particularly so in view of the one experience common to all observers—namely, that the drug seems to exert a specific action on tuberculous tissues. The Medical Research Council expects that many months will pass after the issue of this preliminary report before any further definite conclusions can be drawn. Trial on a larger scale is now justified, and it is hoped to widen the field of work with the help of more observers. But the Council is of opinion that such further trial and extended observations are imperatively required before it can be clearly stated that this gold salt is of value in the treatment of tuberculosis.

OPTICS

Accommodation and Convergence.—L. Laurance and O. Wood ("American Journal of Physiological Optics," 1925, p. 23) point out that the normal far-point of accommodation varies with the size of the pupil. It is

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in metres equal to 7.5 times the diameter of the pupil in mm. The normal far-point of convergence varies with the interpupillary distance. It is in metres 7.5 times the distance between the pupils in mm. At six metres the practical measurements of the positive conditions, myopia and esophoria, are fractionally too low, those of the negative condition, hypermetropia and exophoria, are similarly too high. There is the relationship of:—P.R. of accommodation: P.R. of convergence, as size of pupil: distance between the pupils, or as the aperture of the actual eye is to that of the mental eye. The near-point of convergence is in general nearer than that of accommodation, especially as age advances. The far-point of convergence is more distant than that of accommodation; consequently the range and the amplitude of convergence exceed those of accommodation. A person commences to converge before he brings accommodation into action, for comparatively distant objects, and probably does the same for near objects, so that, in near vision, convergence for the distance is first made, then accommodation is adjusted for that distance, and this is followed by a final or supplementary convergence adjustment in order that fusion may be obtained.

Strychnine and Visual Reliability.—P. F. Swindle ("American Journal of Physiological Optics," 1925, p. 3) states that strychnine in small doses improves normal vision by decreasing the irritability of the visual elements. This results in a decrease in the rate of self-induction of colours and accordingly a better perception of details. Small coloured patches, such as are used in perimeter experiments, can be retained for a longer time by all regions of the retina because the colours fail to spread over the background colours so rapidly, and vice versa. The observations suggest that strychnine is indicated in amblyopia if the condition is due to an abnormal state of irritability of the visual structures, but that the drug is contraindicated if the amblyopia is due to an abnormal decrease in the irritability of the structures. Doses large enough to tone up the skeletal muscles, sufficiently to prevent accurate fixation, also increase the visual reliability for details in all colours; this is true for patches of blue especially. The following details of the experiments are of interest:—A one per cent. solution of strychnine sulphate was used. Two to five drops applied in the right eye caused coloured patches to persist longer than normally. Both eyes were affected equally when the solution was dropped on the tongue. Seven or more drops increased the time of disappearance of all colours, especially the blue. The bitter taste of strychnine appeared in the mouth in five to fifteen minutes after the first drop was put in the eye. Given by the eye, the effects of five drops of the solution lasted from three to five days.

Treatment of Squint.—A. Freeland Fergus ("British Medical Journal," I, 1925, p. 1002), in an article dealing with the treatment of convergent concomitant squint, states that spectacles should be prescribed as soon as possible. In very young children errors of refraction cannot be measured with any degree of accuracy, and in addition glasses cannot be worn. This is not so serious a matter as might be thought. Clinical experience daily shows that children or even young adults who have never suffered from strabismus may have a very considerable amount of uncorrected hypermetropia and at the same time have excellent visual acuteness. The uncorrected defect has not in such circumstances prevented the development of good acuity. It is not uncommon to find children with 3 or 4 diopters of hypermetropia who nevertheless have standard vision when tested either by the types of Snellen or of Landolt. For these reasons the author advocates delay in ordering correcting glasses till measurements can be made with some approximation to accuracy and till the patient is sufficiently advanced as to be able to wear glasses. So long as each eye is possessed of good visual acuteness—a function which is never lost—there is no hurry to prescribe glasses till it

can be done in a satisfactory manner. Probably the best apparatus for orthoptic treatment is the amblyoscope devised by Mr. Claud Worth. When the patient has reached such an age as to be capable of this training, then, if it be necessary, operation should be performed, preferably by double advancement as recommended by Landolt. As soon as possible after the operation the patient, wearing his correction for any existing ametropia, should resume the exercises with the amblyoscope. If the concomitant convergent squint does not set in till the age of 5 or 6, or if in earlier life the affection has been alternating, then each eye is found to be possessed of good visual acuteness. Here all that is necessary is to advance each external rectus and to begin training with Mr. Worth's amblyoscope or other reliable form of stereoscope.

PHARMACOLOGY

Tetra-Alkyl-Succinimides are devoid of sedative action is the finding of A. W. Dox ("Journal of the American Chemical Society," May, 1925, p. 1471). The grouping $R_2C <$ is frequent in synthetic narcotics and its extension— $R_2C-CO-NH$ —is strikingly prevalent in nitrogen containing hypnotics. Though the latter grouping is present in duplicated arrangement in tetra-ethyl-succinimide and symmetrical dimethyl-diethyl-succinimide, these on intraperitoneal injection into white mice produce toxic effects suggestive in a general way of strychnine poisoning. The dose (0.15 mgm. per grain body weight) was only one-half the effective dose of veronal.

Creosote and Chaulmoogra Oil.—Plain chaulmoogra ethyl esters, according to H. W. Wade ("Philippine Journal of Science," January, 1925), are decidedly the least favourable of the preparations used as regards treatment factors in tuberculosis. The addition of creosote (10 per cent.) to plain chaulmoogra ethyl esters reduces the local irritation to almost, though not quite, the same degree as does 0.5 per cent. iodine, and permits increased medication. The simple iodised drug is somewhat, though not markedly, better than the simple creosoted form; which it is to be preferred will depend on a comparison of the therapeutic effects. The combination of creosote and iodine has no distinct advantage and has certain disadvantages. The only noteworthy drawback of the creosoted preparations is an apparently greater tendency to cause respiratory tract irritation.

Colloidal Kaolin.—W. Pope and R. T. M. Haines have investigated some of the properties of colloidal kaolin ("Lancet," I, 1915, p. 1123). It is pointed out that since the medicinal applications depend upon an absorptive power which would be expected to increase with increased sub-division of the particles, only the most finely divided kaolin should be used medicinally. During the last few years methods have been devised for the separation of the larger or more gritty particles from kaolin, and for the manufacture of a product consisting only of the more minute particles; the kaolin thus obtained is so finely divided that it shows colloidal properties when suspended in water. In view of the medicinal applications of this so-called colloidal kaolin; it seems desirable to record its behaviour towards a number of reagents. The authors show that kaolin is a negative colloid. The addition of the solid colloidal kaolin to negative colloidal solutions, such as those of arsenic trisulphide, antimony trisulphide, and the sensitive red colloidal gold, causes no change. When the kaolin is added to solutions of positive colloids, flocculation takes place immediately; thus, on adding the kaolin to colloidal ferric hydroxide solutions, the kaolin settles out, carrying with it the ferric hydroxide and leaving the supernatant liquor clear and colourless. The absorption of iodine from its aqueous solutions containing potassium iodide was also studied. On shaking a solution containing 1.45 gram of free iodine per litre with one-tenth its weight of kaolin and allowing to settle, 5 per cent. of the iodine is carried down by the kaolin; the concentration of iodine in the kaolin is thus about

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one-half of that in the supernatant solution. Basic dye-stuffs are removed from aqueous solutions by addition of colloidal kaolin, but acid dye-stuffs are not absorbed from aqueous solution by colloidal kaolin. Amphoteric dye-stuffs behave differently towards colloidal kaolin in acid and alkaline solutions. It has now been shown that positive colloids are completely flocculated by colloidal kaolin, whilst basic dye-stuffs are not completely removed from solution by the kaolin, but become distributed between the solution and the kaolin in proportions which can be determined. This distinction is interesting in view of the results obtained by R. R. Walker in connection with the action of kaolin on the cholera vibrio and on the toxin prepared from the bacilli. He found that kaolin did not remove the vibrios from the suspension, although many were doubtless entangled in the depositing powder. He found, however, that the cholera toxin is entirely removed by the kaolin. The toxin behaves like a positive colloid, and not like a basic dye-stuff. In a paper in the same issue J. W. H. Eyre describes his experiments on the absorption of toxin by kaolin. He points out that the addition of agar to medicinal kaolin was considered rather to hinder the action of the kaolin. This possibility is strengthened by the results of the experiments described.

PHOTOGRAPHY

Photographing the Sky.—Conrad Beck ("Journal of Scientific Instruments," II, 1925, p. 135) describes an apparatus to photograph the whole sky. As some form of preliminary reduction of the angle of view is required before taking a photograph which includes a field of 180°, a highly divergent meniscus lens designed by Mr. R. Hill is used for this purpose. The different forms of distortion, one of which is necessary to project an angle of view of 180° upon a flat surface, are discussed and previous attempts to reproduce the field of view as seen by a fish are outlined. The method of reproducing normal photographs from small portions of the complete photographs is described.

Prevention of Tank Fog.—A. E. Amor ("British Journal of Photography," 1925, p. 183) has investigated the action of various dyes in reducing tank fog caused by a metol-quinol developer which normally produces considerable tank fog. It was found essential for the dye to be present in the developer, as bathing the emulsion in the dye prior to development did not reduce the fog. The most efficient concentration is one part of dye in 1,000,000 parts of working developer solution. The following figures show the action of various dyes in reducing tank fog with the particular developer:—

Dye	Fog density
None	0.12
Phenosafranine	0.05
Pinakryptol green	0.05
Basic scarlet N.	0.09
Chrysoidine	0.10
Acid yellow	0.11
Methylene blue	0.15
Victoria blue	0.10
Rhoduline violet	0.12
Auramine	0.11
Acridine yellow	0.11
Methylene blue (1/1,000,000) + acridine yellow (1/4,000,000)	0.15
Victoria blue (1/1,000,000) + acridine yellow (1/1,000,000)	0.10
Rhoduline violet (1/1,000,000) + acridine yellow (1/6,000,000)	0.12
Victoria blue (1/1,000,000) + auramine (1/1,000,000)	0.11

It is seen that only the first two named (and basic scarlet N. by virtue of one of its constituents) are efficient. In more extreme cases these dyes are relatively more efficient, e.g., in cases of tank and stand development where as much as 0.4 chemical fog has developed, the above concentration of phenosafranine will prevent as much as 0.3 of this amount. In all cases, pheno-

safranine is slightly but distinctly superior in this connection to pinakryptol green, although the reverse is the case with their desensitising powers.

Equivalence of Carbonates in Developers.—S. F. Shepard and F. A. Anderson (Communication 232, Eastman Kodak Research Laboratory) find that sensitometric development tests upon cine negative and portrait film emulsions indicate that the substitution of a molecularly equivalent quantity of potassium carbonate for the sodium carbonate of a standard Elon-hydroquinone developer does not, with the single exception of two-minute development of cine negative, alter the developing power of that developer. Doubling the sodium carbonate content increases the developing power of the same developer. It is concluded that in the case of the particular developer-emulsion systems examined, the developing equivalence ratio of sodium and potassium carbonates approximates to unity within the limits of the probable experimental error. While the present results warrant no prediction of the carbonate equivalence ratio in other developers, the establishment of one case in which the effect of the carbonates is definitely non-specific is significant since it brings into question a principle which has hitherto received apparently unquestioned acceptance in regard to developer equivalents.

VETERINARY MEDICINE

Cod-Liver Oil in Distemper.—A. S. Schlingman ("Journal of American Veterinary Medical Association," April 1925, p. 91) states that the results obtained from the administration of cod-liver oil in relatively large doses to dogs suffering from distemper indicates that, while it is not specific, it is of great benefit in shortening the period of convalescence and can be recommended as a valuable adjunct in the treatment of this disease.

Sulphonal Poisoning in a Cat.—T. F. Prime ("Veterinary Journal," May, 1925, p. 252) records a case in which the owner of a nervous cat, wishing to chloroform it, first gave the animal ten grains of sulphonal. This only made the cat slightly sleepy, but more nervous than usual, so another thirty grains were given, but had comparatively little sedative effect, so after four hours another dose of thirty grains was given. This in three hours' time had quite a peculiar effect on the cat, causing sleepiness, but on the slightest unusual sound the cat was seized with symptoms practically simulating those of epilepsy, rushing around the room, knocking into articles of furniture, trying to climb up the corners of the room, carrying its head a little on one side, and having partial paralysis and loss of control of the hind quarters. After running excitedly around the room several times it would fall down on its side from exhaustion. Chloroform was administered during one of these attacks, and the cat quickly died owing to heart failure.

Ulcerative Affections of the Cornea.—H. Gray ("Lancet," I, 1925, p. 1029) states that ulceration of the cornea may occur with influenza in the horse, swine fever, trypanosomiasis, rabies, and as a result of infections of the conjunctiva. It is seen sometimes also when tuberculosis attacks the eye in oxen, sheep, cats and dogs, in epizootic lymphangitis, and in specific ophthalmia in the ox and the horse. In the dog this ulceration might be a sequel of paralysis of the ophthalmic division of the fifth nerve, or of tumours involving the roots of the nerve. In the horse and the cat, in which the cornea is thick, excavated ulcers are met with, but repair takes place without much difficulty. Accompaniments of these ulcers are intense photophobia, lacrymation, and powerful blepharospasm. In the case of a wide ulcer, paracentesis should be carried out without delay, in order to avoid a large spontaneous perforation. When photophobia and blepharospasm are present, cocaine drops should be instilled to relieve conjunctival congestion.

Tuberculin Tests in Cattle.—Among the conclusions reached by the Tuberculin Committee of the Medical Research Council, according to a recently issued report

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(Special Report Series, No. 94; H.M. Stationery Office, 3s.), are the following: (1) The subcutaneous test is perfectly satisfactory for the presence of tuberculosis in cattle, when carried out under the laboratory conditions of a scientific trial, though it may be unsatisfactory in ordinary farm conditions; (2) the intradermal test is superior to the subcutaneous tests, the ophthalmic test being regarded as subsidiary; (3) the intradermal test is an accurate one for the presence of tuberculosis in cattle, the percentage of error being extremely small; (4) its further advantages over the subcutaneous test are, no need for temperature observations, no need to rest the animal or interfere with routine treatment, three observations only are usually necessary and a smaller quantity of tuberculin is needed; (5) the variety of tuberculin employed is "old tuberculin," and it appears to be immaterial whether bovine or human strain is used; but (6) it should be of proved high potency, being administered undiluted for both intradermal and ophthalmic tests.

Dose of Dimol.—H. Gray ("Veterinary Record," I, 1925, p. 315) speaks highly of Dimol as a bactericide both for internal and external application. The following are suggested as the dosage and best methods of administration: *Horse and Ox.*—3ij.-3j. of the powder in half a pint of gruel or other suspending material as a drench, or the powder may be given as a ball or in a capsule two or three times daily. It may be dissolved in water and used as a rectal injection. As an electuary it may be mixed with treacle or honey. *Foals and Calves.*—The dose is gr. xv.-xxx., in warm milk, treacle or honey. *Dogs, Cats and Rabbits.*—It is best given in tablet or pill form, from gr. jss.-x., according to age, size or weight. *Poultry.*—It may be given in pill form or mixed with food in doses of from gr. j.-x. twice daily. *Pigeons.*—It is best given in pill form in doses ranging from gr. j.-ijj. daily. *Cage-birds.*—It may be given in the form of a syrup, and either forced down the throat or mixed with the drinking water or, in some cases, with the food. The dose varies from two drops according to the size of the bird; parrots will take a teaspoonful, or even more, two or three times a day.

Anæsthetics and Antidotes.—F. T. G. Hobday ("Veterinary Record," I, 1925, p. 309) points out that the anæsthetic employed depends somewhat on the variety of patient, age, diseased conditions and the expert help available. For general anæsthesia the choice lies between chloroform, ether and sundry mixtures (such as A.C.E. and A.E.C.) of the two. He prefers pure chloroform for the adult horse, cow and dog, with A.C.E. mixture with ether for the monkey, puppy and the cat. Ether, ethyl chloride, nitrous oxide and A.C.E. mixtures are not suitable or convenient for the horse or the larger animals. As regards dogs, when morphine is given first, the amount of chloroform required is small. Chloroform is also used for birds, particularly for the operation of caponing. As antidotal treatment upon cessation of respiration or its threatened failure a full medicinal dose of Scheele's hydrocyanic acid given on the back of the tongue or hypodermically is strongly advocated. In the horse, the dose advised is 3ss. to 3j. hypodermically, in the dog from mj.-v. on the tongue, in the cat mj.-v. on the tongue. Artificial respiration should also be applied. Among other useful antidotes are liquor ammon. fort. and amyl nit. Strychnine has almost ceased to be of value. A note of caution is given regarding the idiosyncrasy of various animals to the effects of local anæsthetics, but if those of cocaine are known its substitutes, which are less poisonous, can be employed with safety. The maximum dose of this alkaloid to be absorbed at one time should never exceed ten grains for an animal the size of a horse or an ox. For a cat or small dog the maximum is considered half a grain; for a dog the size of a terrier, one grain; and for the size of a great dane or mastiff it is not wise to exceed two grains.

Eye Diseases in Horses.—A. F. MacCallan and H. Mason ("Lancet," I, 1925, p. 1070) state that the presence of one or two opaque dots in a lens might not interfere with an animal for draught or riding purposes, but extension of the opacity would make it useless for the saddle and for breeding, as most cataracts in horses are hereditary. Glasses could be provided for horses. The author criticises the method of lens extraction set out in Woolridge's edition of Woodruff's work. In horses in France during the war there was a condition known as periodic ophthalmia, a form of irido-cyclitis. The animal had photophobia, with inflamed conjunctiva, and the cornea was very hazy, but not ulcerated. Also the iris was inflamed, and it was impossible to keep the pupil dilated with atropine. It was not a contagious disease, and could not be reproduced by injection of the eye humors into a healthy animal. It seemed to be due to some general disease, and *post mortem* there were found many opacities of the lens and flocculent opacities in the vitreous. [During the discussion of the authors' paper General Sir John Moore spoke of the eye diseases in army horses which occurred during the war in France. During that time there were 36,690 cases of eye disease in horses, and of these 19,813 were cured, while 2,558 animals were destroyed, and 9,723 cast and sold. The most serious cases in these horses were those due to periodic ophthalmia, and at a conference with the French veterinary authorities careful consideration was given to this well-known disease, called in the old coaching days "moon-blindness." Horses which had this condition got very fat and were apparently healthy, but had to be relegated to work on the lines of communication. At one time during the war there were over 2,000 horses being treated for periodic ophthalmia in France. Bacteriological examinations did not reveal any causal organism, and the disease was apparently as common in outside standings as in stables.]

Male Fern in Liver Rot.—R. F. Montgomerie ("Journal of Comparative Pathology and Therapeutics," March 1925, p. 1) has carried out three series of experiments which show that the administration of an amount of male fern much less than that which may be expected to prove lethal to Welsh Mountain ewes destroys all the flukes present in the larger bile ducts of such animals. The quantity necessary for lambs is much less than that which proved fatal to an infested lamb. Observations on seventy sheep, half of which were treated with Danistol and half with liquid extract of male fern B.P., do not confirm the claim that the former preparation is more efficient than the latter. Field trials show that a course of treatment with either preparation in the doses given will not destroy immature flukes present in the parenchyma of the liver or small bile ducts. The liquid extract of male fern was made into an emulsion with milk, preferably warmed to blood heat, in the proportion to one part of extract to seven of milk. This emulsion was administered as a drench. Each dose was given in the morning, the sheep having been removed from the pasture in the afternoon of the previous day. The doses were as follows:—(a) Lambs weighing up to 45 lb.—a single dose of one drachm or a dose of thirty minims repeated after twenty-four hours; (b) Welsh Mountain ewes weighing up to 70 lb.—one drachm, repeated after twenty-four hours; (c) sheep weighing about 72 lb.—one drachm fifteen minims, repeated after twenty-four hours; (d) sheep weighing from 106 to 125 lb.—one drachm thirty minims, repeated after twenty-four hours. The sheep were kept on as dry land as was available and no tonic medicine was given. Treatment of ninety flocks, an aggregate of 7,376 sheep, shows that with the exercise of reasonable care liquid extract of male fern, B.P., may be successfully employed on a large scale in the treatment of liver rot in sheep. Until an effective method is found of dealing with immature flukes, it is suggested that, following a course of treatment as above, steps should be taken to avoid re-infestation and the animals re-dosed three or four weeks later.

British Pharmaceutical Conference

Preliminary List of Science Papers

THE following list of science papers to be presented at the forthcoming meeting of the British Pharmaceutical Conference at Glasgow has been forwarded to us by the general secretaries, who will be glad if members who desire to contribute papers to the scientific proceedings of the Conference will send in the titles as soon as possible. Manuscripts, in triplicate if possible, should be sent in not later than July 1. Authors who require reprints of their papers are requested to inform the general secretaries of their wishes when submitting their papers.

"The Identification by Chemical Methods of Drugs containing Tannins." By Alan H. Ware, Ph.C.

"The Estimation of Ammonia and Urea in Body Fluids." By F. Wokes, B.Sc.

"Cochineal. The Utility of Assay Methods in the Estimation of Comparative Colour Values." By A. O. Bentley, Ph.C., and S. Meakin.

"The Testing of Dispensed Medicines." By G. D. Elsdon, B.Sc., F.I.C.

"Some Notes on the Monograph on Quinine Sulphate in the B.P. Codex, 1923." By Bernard Howard, F.I.C., and Oliver Chick, A.I.C.

"Chemical Investigation of the Oleo-Resin of Indian Valerian." by Kenneth Bullock, M.Sc., A.I.C.

"The Analysis of Gregory's Powder." By J. F. Liversedge, F.I.C., Ph.C.

"The Vitamins of Lemon Peel." By F. Wokes, B.Sc.

"The Picrates of the Opium Alkaloids." By Cyril W. Maplethorpe, A.I.C., and Norman Evers, F.I.C., B.Sc.

"The Increase in Specific Gravity of Easton's Syrup on Keeping." By C. M. Caines, F.I.C., and Norman Evers, F.I.C., B.Sc.

"Bismuth Carbonate. Some Factors affecting its Physical Condition." By A. J. Jones, Ph.C.

"The Colorimetric Estimation of Benzoic Acid in Cordials, etc." By A. J. Jones, Ph.C.

"The Identification of Alkaloids." By Dr. W. M. Cumming, F.I.C.

Golfing Events

About a score of the members of the Manchester and District Pharmaceutical Golfing Society gathered at Northenden Golf Club,

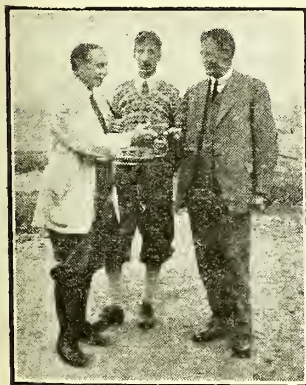


Photo [Cleworth

MR. BLYTON PRESENTING HIS PRIZE
Left to Right: Messrs. Miller,
Aves, Blyton

Blyton for the gift of his prize and for coming to present it. The following were the chief scores:—

T. Miller ... 84-9=75	T. O. Owens ... 85-Sc.=85
G. R. Potts ... 91-14=77	J. A. Collins ... 86-Sc.=86
W. A. Sturdy ... 95-17=78	A. H. Turner ... 93-12=86
R. G. Edwards ... 93-12=81	W. W. Burton ... 104-13=91
R. Whittaker ... 92-19=82	

Births

Notices for insertion in this column must be properly authenticated.

GOSLING.—At 6 North Road, Clapham Park, London, S.W.4, on June 10, the wife of C. W. Gosling, Ph.C. (London College of Pharmacy), of a son.

PARKER.—On May 29, the wife of Leslie A. Parker, chemist and druggist, Warsop, of a daughter.

WILSON.—At Ardlogie, Land Street, Keith, on June 11, the wife of Arch. Wilson, M.P.S., the Rexall Pharmacy, Mid Street, of a daughter.

Marriages

JAGGER—OUTWIN.—At Christ Church, Doncaster, on June 3, James Arthur Jagger, chemist and druggist (Doncaster Co-operative Society, Ltd.), to Kate Outwin.

MESSINGER—BUCK.—At St. John's Church, Birkdale, Southport, on June 10, William Arthur, younger son of Mr. A. H. Messenger, chemist and druggist, Southport, to Rebecca E. Buck.

WADSWORTH—CRAWFORD.—At Ballygrainey (co. Down) Presbyterian Church, on June 3, James Megarry Wadsworth, Ph.C., Lisburn, to Sadie Crawford.

WALSH—GARLAND.—At University Road (Moravian) Church, Belfast, on May 20, Jacob Walsh, R.D., York Street, to Winifred Garland.

WHITEHEAD—BUCKLEY.—At Saddleworth Church, Oldham, on June 3, Robert Henry Brandwood Whitehead, chemist and druggist, to Ida Clarissa Buckley.

Deaths

BURGESS.—At Clent, Worcestershire, on June 10, after several years' intense suffering, Nettie Burgess, the dearly loved wife of Mr. J. Terry Burgess, and only daughter of Mr. W. W. Ive, chemist, 115 Gloucester Road, London, S.W.7.

DIBDIN.—At 31 Idmiston Road, West Norwood, London, S.E.27, on June 9, Mr. William Joseph Dibdin, F.I.C., F.C.S., aged seventy-four. Mr. Dibdin was chief of the chemical and gas department of the Metropolitan Board of Works and of the London County Council from 1882 to 1897, and was afterwards in practice as an analyst and consulting chemist. He was editor and part author of the fourth volume of Churchill's "Chemical Technology," and wrote extensively on photometry, water purification, and other subjects.

DUNCAN.—At 24 Dick Place, Edinburgh, on June 13, Mr. John Duncan, one of the oldest journalists in Scotland. Mr. Duncan acted as reporter at meetings of pharmacists in Edinburgh for more than thirty years; he also reported several law cases of importance to the drug trade. His experience in journalism extended over half a century, and he was widely known and esteemed. He is survived by a son and two daughters.

EDWARDS.—At Clinton Road, Redruth, on June 8, Mr. Richard Sanderson Edwards, chemist and druggist, aged eighty-three. Mr. Edwards commenced business in Redruth more than sixty years ago. For half a century he was local secretary of the British and Foreign Sailors' Society. He is survived by three sons and a daughter.

EMSLEY.—At Hornsey, London, N., on May 29, Mr. Joseph Emsley, chemist and druggist, aged seventy-seven. Mr. Emsley carried on business at 9 Parkhurst Road, Holloway, N., in succession to Mr. J. S. Laing, chemist and druggist, for several years. He retired in 1912.

MACSWEENEY.—At his residence, Ballydowney, Killarney, on June 7, after a long illness, Mr. Denis MacSweeney, chemist and druggist. Mr. MacSweeney, who was the brother of Mr. Eugene MacSweeney, chemist, Patrick Street, Cork, studied at the London College of Pharmacy, and qualified in 1910.

Personalities

MR. EVAN D. EDWARDS, chemist and druggist, Cardiff, was knocked down by a motor-car on June 5. On arrival at the Royal Infirmary he was found to be suffering from fractures of both legs and other injuries.

SIR DAVID PRAIN, F.R.S., late Director of the Royal Botanic Gardens, Kew, has been awarded the Albert medal of the Royal Society of Arts "for the application of botany to the development of the raw materials of the Empire."

MR. H. W. HARRIE (C. R. Harker, Stagg & Morgan, Ltd.), chairman of the London office and finance committee of the Commercial Travellers' Benefit Society, has been appointed a delegate to the annual conference of the Holloway Union of Friendly Societies, to be held at Portsmouth on July 18.

MR. E. E. EVANS, chemist and druggist, Aberdare, High Constable of Miskin Higher, whose appointment was referred to in our issue of May 9 (p. 676), attended Trinity Church in his official capacity on June 14, accompanied by a large number of officials and representatives of various local bodies.

Wills

MR. THOMAS HENRY DEWEY, chemist and druggist, Kimbolton, who died on April 16, left estate of the gross value of £971 6s. 1d.

MR. JOHN SHAW, chemist and druggist, 74 Newgate Street, Bishop Auckland, who died on April 18, left estate of the gross value of £14,621 10s. 5d., with net personality £8,602 4s. 2d.

MR. JOHN EDWARD LINCOLN, chemist and druggist, 80 High Street, Northfleet, who died on May 7, left estate of the gross value of £1,332 15s. 3d., with net personality £1,279 12s. 3d.

MR. JOHN HUGHES, chemist and druggist, 89 Upper North Street, Poplar, London, E., who died on March 29, intestate, left estate of the gross value of £996 13s., with net personality £446 9s. 1d. Administration of the estate has been granted to his widow, Mrs. Annie Margaret Hughes.

MR. ALEXANDER DICK WYLLIE, chemist and druggist, 2 Whitehall Road, Gateshead, who died on March 22, left estate of the gross value of £5,257 9s. 9d., with net personality £5,016 16s. 8d. Probate has been granted to his sons, Mr. James R. Wyllie, of the same address, chemist, and Mr. Donald G. Wyllie. The testator left all of his property equally between his three children, J. R. Wyllie, D. G. Wyllie, and Gladys M. Wyllie.

Recent Patents

Abstracts of specifications of recently-granted patents for inventions. The complete specification (1s. each including postage) of any British patent can be obtained from the Patent Office, 25 Southampton Buildings, London, W.C.2, on quoting the name of the patentee and the number of the patent.

Tubercle Vaccine.—Tubercle bacilli, after washing and drying, are suspended in dilute hydrochloric acid; the suspension is heated, cooled, rendered alkaline, and centrifuged; the precipitate is then treated with alkali and acetic acid; washed and dried with alcohol and ether. (E. Toennissen. 233,377.)

Dispensing Bottles.—A bottle provided with a wide base, fitted with a hinged cover on to which is fixed a spoon, which, when the cover is closed, is immersed in the liquid, or powder, contained in a small cup-shaped recess at the bottom of the container. On raising the cover the spoon containing the requisite amount of medicinal substance to be applied by means of a pledget of cotton assumes a horizontal position. (M. Zulliard. 231,873.)

Trade Notes

ANTI-STING PREPARATIONS are the subject of the advertisement in this issue of Arthur H. Cox & Co., Ltd., manufacturing chemists, Brighton.

LAMPLOUGH'S PYRETIC SALINE is now obtainable in a smaller size retailing at 1s. 6d. A bonus offer of two free bottles with an order for six is announced in the advertisement of Butler & Crispe.

ASPIR-GRAN.—The Graesser-Monsanto Chemical Works, Ltd., Ruabon, are producing a pure variety of aspirin specially adapted for tablet making. It requires no granulation, and thus saves time and money. A booklet referring to this can be had on application.

BEECHAM'S PILLS.—The price of Beecham's Pills is to be protected under the scheme of the Proprietary Articles Trade Association on and after July 1. A price list is given in our advertising pages, and a note regarding the sale of the pills in small quantities.

CEPHOS SHOW-CARD.—Cephus, Ltd., Blackburn, have produced an attractive show-card in colours to advertise Cephus, a remedy for headache and rheumatism. The subject of the card is topical, being a scene in the cricket field. Copies of the show-card can be had on application.

"B. & B." LYSOL.—Butler & Crispe are the wholesale agents for the lysol manufactured by Benzol and By-Products, Ltd. The prices of this product and particulars of a bonus offer are given. It will be seen that the retail prices are protected under the scheme of the Proprietary Articles Trade Association.

LEMONADE CRYSTALS.—Meggeson & Co., Ltd., New Church Street, Bermondsey, London, S.E.16, send us a sample of their packing of concentrated lemonade crystals. These are packed in bottles and cartons, and require the addition of sugar. The crystals are quite dry.—We are asked to state that Messrs. Meggeson's works and offices will be closed on June 20 for the annual staff outing.

TERPENELESS ESSENTIAL OILS.—E. Sachsse & Co., Leipzig, manufacturers of terpene and sesquiterpene free oils, have issued a booklet giving a list of these oils, of which they claim to have been the first to make a full range. The concentration of the terpeneless oils and their solubility are given in the booklet, copies of which may be obtained by manufacturing chemists, soap-makers, and perfumers from the London agents, T. Harrison & Co., Burnley House, Willesden, London, N.W.10.

PHOTOGRAPHIC COMPETITION.—Burroughs Wellcome & Co. are offering to amateur photographers five prizes of one guinea each for the five best holiday photographs taken during July or August. Prints submitted on or before September 12 must be accompanied by the July or August light table from the "Wellcome" Photographic Exposure Calculator, Handbook and Diary, 1925, and be addressed to "Photo Competition," Burroughs Wellcome & Co., Snow Hill Buildings, London, E.C.1. Negatives must be developed with anv "Tabloid" developer, and those from which winning prints are made must be loaned for one month to Burroughs Wellcome & Co., who are to have the sole right of reproduction. Window bills, entry forms and advertising literature will be sent free to the trade on request.

Information Department

INFORMATION WANTED

Postal or telephone information with respect to makers or first-hand suppliers of the undermentioned articles will be appreciated:

B/76. Anderson's Plasters for sciatica	B/76. Excelsior colloidal iodine chocolate
M/66. Calefornian perfumed bead necklaces	B/66. Solmedia
M/166. Line's sutures	M/96. Renepas (for rheumatism)

Observations and Reflections

By Xrayser II.

That Revision of the Charter

is necessary is not my opinion only; it has been affirmed by many members of the Council who are not usually regarded as "progressives," including the ex-President. Indeed, the only dissentient voice I have heard is, curiously enough, that of the editor of "The Script," who has persuaded himself that really democratic government is possible under the Charter: such, at least, is what I gather from an article on the subject in last month's issue of "The Script." But however individual opinion may vary, the question has been so prominently presented, and the case for revision so convincingly set forth and so widely accepted, that its consideration at the Glasgow Conference is inevitable. The reason Mr. Cofman-Nicoresti gives for not having pressed it at the annual general meeting may be a good one; at all events, it shows that the advocates of reform are more scrupulous in their tactics than the conservative section of the Council have proved themselves; but no such reason can be urged against the most drastic demand likely to be made at Glasgow. The delegates there can do no more than speak the mind of those they represent; they can bind the Society to nothing. Still, it is of the highest possible importance that everything that can be done should be done to prevent this question being either shelved or dealt with in the dark by men who do not understand what the Society really wants or are not in sympathy with it. As Mr. Cofman-Nicoresti says, we must not only have revision, but we must see that it is in "safe hands."

Mr. Guinness,

Financial Secretary to the Treasury, showed a curious lack of historical knowledge in his reply to Captain Wedgwood Benn's question with regard to the medicine duties, and I am not sure that it would do to rely implicitly on what he said on the law of the subject. It is true the tax on medicines dates from 1783, but this was considerably after, not "immediately preceding," the American War of Independence, which actually broke out in 1775. More important, however, is the legal question. There are, unless I am mistaken, more than the three tests named of preparations liable to duty, and I fancy the term "specific" hardly covers the ground in the case of the first of those he did mention. What is a specific? Mr. Guinness was, again, clearly wrong, as Sir Alfred Mond pointed out, in regarding the codification of the medicine duties as a matter for the Ministry of Health.

Sir William Glyn-Jones

has come home again, "bearing his blushing honours thick upon him," and it was smart of the Liverpool Association to secure a first report of his experiences from his own lips. I am not sure whether this visit, and the internationalisation of pharmacy towards which it may be meant as a step, is a matter upon which we should congratulate ourselves. Certainly I do not share Sir William's enthusiasm for the Canadian type of pharmacy, which seems to be already so far "Americanised" that the process cannot well go much further. Is it not a little inconsistent in the secretary of a society whose members suffer so severely from "company pharmacy," and which is itself a standing protest against the commercialisation of pharmacy, to hold up for our emulation the type of pharmacy described by Sir William in which everything pharmaceutical is kept out of sight and the pharmacist thrives on things "outside the profession"? In Canada, as here, it seems, there are two "sections," a scientific and a commercial one, but the former appears, so far as we can judge from what is told us, to be very much less in evidence than the other. Let us by all means cultivate relations with Canadian and foreign pharmacists; we may doubtless learn much from them, and, among other things, what to avoid. The Canadian pharmacist may be "a

man of vision," but his vision appears to be fixed mainly on "big business." He may all the time be aiming at something higher, but if it is pure pharmacy, I fear that "gums and pomatums shall his flight restrain," not to speak of other and less pertinent side-lines. (N.B.—For "gums" read "chewing-gum.")

The Fact is,

however, that Sir William is above all things a business man, and this side of our craft probably interests him more than the professional one. If so, he would naturally give the more attention to it when in Canada and in his report to us at home. He appears to have greatly impressed pharmacists over yonder with his grasp of business problems, and reading between the lines (as one fairly may) it is impossible not to suspect that this visit may ultimately mean more than was anticipated when it was undertaken. The Canadian Proprietary Articles Trade Association which he is to help in forming can hardly receive from him the attention it will demand while he is engaged in his double duty to the Pharmaceutical Society and the P.A.T.A. here at home. An International P.A.T.A. is scarcely within the sphere of practical politics, and does not seem to have been very seriously entertained. Meanwhile, "without prejudice to any future decisions on his own part or that of the trade in the United States or Canada" is a rather ominous phrase for those who regard Sir William's presence here as essential to the highest interests of our Society. If the "temporary" arrangement made does not prove satisfactory, what then? Canada and the U.S.A. together can offer Sir William bigger business than we, and big business attracts big minds.

In Discussing Doctors' Dispensing

last week I was not thinking of panel work, in which, no doubt, a sort of sale does take place, the doctor receiving payment for the drugs, etc., which he is supposed to have used. It is manifestly dishonest of a doctor to claim payment for a spirituous tincture if he has used an aqueous one, or for an expensive drug if he has used "some cheap make-shift"; but if he prescribes the cheaper medicine and is paid accordingly, what I said of doctors' dispensing in general holds good of panel dispensing too. As regards that department, it is but just that he should be subject to the same discipline as ourselves; but I do not think we should gain much if he were, unless it were that by the exposure of his "cheap" prescribing he fell into disrepute with his patients, which is a very remote and unlikely contingency. All that has been said in opposition to my view shows that dispensing should be entirely taken out of the doctors' hands, and it would be better policy on our part to stick to this point than to help to regularise a practice, vicious in itself, which will surely die a natural death in time. There is a danger, too, that if we succeeded in this, as regards panel practice, State dispensaries might be set up where there are no chemists, and ultimately everywhere.

"Ethics"

seems to me to be a somewhat overworked word; and though it is quite legitimate to use it in the restricted sense of rules of conduct by which certain professions or associations agree to bind themselves for ulterior purposes, we must remember that in doing so we rob the word of its more "awful" sanction as the voice of moral obligation, or "the categorical imperative." It may be maintained that all morality is contingent; but many matters that come under the head of pharmaceutical ethics are less so than, let us say, the ten Commandments. After all, the real sanction of such "ethics" (and probably of all) is expediency, only in saying so it must be understood as using that word in its largest sense. It is not morally wrong in a pharmacist to cultivate side-lines even to the neglect of his more "legitimate" business, and consequently it is not strictly correct to speak of his conduct as unethical. The use of such terms is a begging of the question. We may call his practice unprofessional if we like, but it is not morally binding upon everybody who has passed the Qualifying examination to aim at a professional status.



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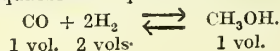
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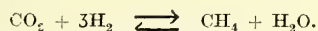
Editorial Articles

Progress in Science and Industry

A FEATURE of THE CHEMIST AND DRUGGIST is the wide scope of its subject-matter, which ranges equally from international industry to fundamental science. The bearing of pure physical chemistry on pharmaceutical or chemical technology would at times appear exceedingly remote, but the research on the synthesis of methyl alcohol summarised in this quarter's Progress of Pharmacy exemplifies how short is the path leading from pure chemistry and physics to industrial chemistry. The production of methyl alcohol from water-gas, one of the cheapest fuels known, is only one of the many known reactions between carbon monoxide and hydrogen, but the inventor Putark conceived his process on the assumption that, on the laws of Van't Hoff and Le Chatelier, pressure would displace towards formation of methyl alcohol, the equilibrium equation:



The yield of methyl alcohol is almost theoretical, and the product is practically pure (containing only traces of acid and a little water (93 per cent. distilling below 80° C.). At first sight it would appear that a change in equilibrium conditions due to pressure alone brought about the desired result. Other considerations, however, show that one simple reversible chemical equation does not represent all that may happen in a water-gas equilibrium reaction. Sabatier and Senderens, the pioneers of catalytic hydrogen, obtained in 1905 methane and water almost quantitatively, using nickel catalyst at pressure nearly atmospheric.



In the production of methyl alcohol, not only is pressure required, but a mixed catalyst (such as metallic copper and zinc oxide) and contact with iron must be avoided. The use of iron-alkali catalyst (iron filings and potassium carbonate) has been applied by Franz Fischer in Germany for synthesis of liquid fuels from water gas. This product, known as "synthol," contains methyl alcohol, ethyl alcohol, propyl alcohol, and higher alcohols up to C₆. Acetic acid and higher acids up to C₆, aldehyde, isobutylaldehyde and higher aldehydes, acetone, methylethyl ketone, methyl ketone, methyl-*n*-propyl ketone. About 87 per cent. of synthol distils below 200° C., so that it is a promising motor fuel, while it provides a whole range of synthetic solvents. Furthermore, synthol autoclaved at 400° C. is transformed into a mixture of hydrocarbons known as "synthin," consisting of olefines and naphthenes. "Berginisation," a process invented by Bergius at Mannheim for conversion of coal or other solid carbonaceous fuel into liquid fuels (petrol, Diesel oil, and heavy fuel oil), consists in hydrogenation under pressure (over 100 atmospheres) and high temperatures (400° to 450°). Thus, catalytic hydrogenation, which has revolutionised soap manufacture, promises to provide liquid fuels and solvents to a world using up its natural resources at a ruinous rate. The point that emerges from the synthesis of methyl alcohol is that its production is possible by arranging factors of temperature and pressure in reversible equilibrium reaction. The principle of "mobile equilibrium" would thus appear to dominate chemical processes and physical phenomena alike, for Professor G. N. Lewis enunciates a law of entire equilibrium for thermodynamics, while Mr. W. A. Whatmough claims that equilibration of energy controls the contraction of matter and space. While one wonders if there is a real rapprochement between theoretical and technical science, the fact remains that by arrangement of environal conditions water gas can be converted into hydrocarbons, alcohols, or oxidation products thereof. The economic possibilities are limitless, because hitherto alcohol has only been produced by fermentation processes, which results in heavy loss of fermenting material (sugar) as carbon dioxide, whereas the new synthetic method not only uses the cheapest carbonaceous matter, but practically none is lost in the conversion. The designing and production of manufacturing plant to withstand high pressures is the obstacle in the way to important developments, but Germany is already producing over 20 tons of methyl alcohol per day, and has plant capable of berginising per annum about 20,000 tons of heavy oil. It remains to be seen whether the British nation will obtain any advantage from the new discoveries. Pure methyl alcohol is a good solvent, and by no means so toxic as wood naphtha, with its many impurities. Revenue restrictions will in all likelihood

continue their blighting influence on the use of alcoholic liquids either as solvents or motor fuels, and continue the handicapping of British industry in the manufacture of organic chemicals and dyes.

The Scarcity of Benzoic Acid

A POSITION of some interest, and one causing not a little dissatisfaction to consumers, has arisen on account of the Board of Trade's action in refusing to permit adequate importations of the pharmaceutical and foodstuffs quality of benzoic acid. The Dyestuffs (Import Regulation) Act, 1920, controls imports of benzoic acid as a dyestuffs intermediate for which the technical quality is the recognised grade. Under the Key Industries Act a duty of 33½ per cent. is levied on imports unless they are for use in the dyestuffs industry. Briefly, when imported for dyestuffs purposes the Dyestuffs Act applies, and when brought in for any other purpose or use, medicinal, preservatives, etc., the Key Industry Duty operates. The Board of Trade, however, now state they have the power under the Dyestuffs Act to prohibit importation of the quality required for medicinal and foodstuffs preservative purposes, etc. Under the proposed new foodstuffs preservative regulations the use of benzoic acid is increasing, and already the demand by such consumers is larger than hitherto experienced. The acid they demand, however, must be of the highest quality, and it is essential that it does not have a chlorine odour. One can well understand this stipulation is necessary for an article that is to be used in foodstuffs, mineral waters, medicines, etc. It is not denied by the Board of Trade that material of this quality and purity is not procurable from home sources of supply, yet they will not grant licences to permit importation of adequate quantities. To-day consumers are searching the market willing to pay extravagant prices, but supplies on spot are now exhausted. In reply to the many protests from consumers and merchant importers, the Board of Trade so far persist in their attitude of referring them to a British source of supply. Consumers throughout the country have informed the department they must have acid free from chlorine and that such material is not available from home makers. The Board of Trade do not question this statement, and it is supported by the fact that to-day's spot price of the imported chemical is much dearer than the price of the British product. It is not a question of the foreign product being the cheaper—it is solely a question of quality. It is very questionable whether the department are not exceeding their powers under the Dyestuffs Act—their action is certainly in direct opposition to the intentions of that measure in restricting the import of a pharmaceutical and foodstuffs product. Benzoate of sodium, a key industry act product which has hitherto been made here in large quantities from the imported acid, is now being imported. The Board of Trade will not allow the import of the raw material necessary to make this "safeguarded" product. It is this unreasonable attitude, too often met with in Government departments charged with control of trade, that brings the whole system of "safeguarding" into disrepute. It is somewhat disquieting to have to acknowledge that the welfare of a considerable number of manufacturing firms throughout the country, representing many thousands of capital and employing thousands of hands should be held up in this way, and their businesses jeopardised by one or two Government officials. No one questions there is a legitimate demand for an article of a quality not made in this country, and whether they are correct in controlling a pharmaceutical and food-

stuffs product under the Dyestuffs Act or not the Board of Trade are certainly acting in an unreasonable manner by refusing to allow the importation of sufficient quantities of this acid to enable consumers to carry out their business and to produce goods of a satisfactory quality.

Peppermint Oil Situation

THERE is every indication that the position of new crop American peppermint oil will remain highly speculative up to the distillation of the oil. Already, however, buyers who recently purchased on the basis of about 25s. to 30s. per lb. c.i.f. are considered to have bought well. Our New York cable to-day quotes \$18.00 per lb., an advance of \$3.00 on the week, and private cables have been received quoting up to \$20.00. A summary of the present position in New York, received from our correspondent, may be of interest:—

"The recent prices ruling in New York for old crop oil, that is, the present crop, has been \$13.00 to \$13.50 per lb. for the natural, and \$14.00 to \$14.50 for the redistilled oil in cases. These prices during the last month have been selling off a little on actual orders, and as low as \$12.75 for natural and \$13.50 for redistilled in cases has been done. The "selling off" of this oil was not in view of the fact that there was a large amount of oil available in this market, but solely due to the expectation of lower prices for the new crop oil, and, naturally, with these high prices, holders always want to be sure to get rid of all the old oil before any new oil arrives in the market (August-September). This new oil was quoted and sales were made at \$5.40 in the country, material packed in drums, natural oil, towards the end of May. The recent cold snap with a change in temperature within a few hours of almost 50° and the reported frost in the West, resulted in the dealers in Michigan withdrawing their prices and refusing to quote. This is the situation at the present time. No new crop oil is being quoted, and this is the result of very materially increasing the prices of the remaining crop. On June 4 natural oil was being quoted at \$13.50 to \$14.00 per lb., and redistilled oil at \$14.00 to \$15.00 per lb., according to the holder. In view of the fact that there is very little carry-over of oil, 1924 crop, should the present 1925 crop prove a failure, "record" prices will rule on oil of peppermint in the autumn."

From other sources we learn that there is no doubt that the young plants suffered severely by these late frosts, but it is quite possible for the plants to be badly frost-bitten, and yet with two months of fine weather to grow up again to healthy plants. There is every reason to believe that the acreage which has been planted this season is fully 25 per cent. more than last year, but against this a great many fields have been in peppermint for many years and the roots are in a weak condition, with the result that the plants may give a poor yield. But at the same time, should the warm weather continue during June and July, we understand that the crop may be at least 10 per cent. more than it was last year. The yield of oil per acre last year was very much below the average, and this to a large extent had a bearing upon the short crop; it must also be borne in mind that the carry-over this season even now only amounts to a few thousand pounds, and long before the new crop oil can be marketed it will probably have all gone into consumption. Reports are that the distillation will not take place until the second week in August at the earliest, and it is quite impossible to state until the distillation actually commences what the yield per acre will be this season. In this connection we may say that the spearmint plants, which are further

advanced than the peppermint, have suffered more from the severe late frosts than the peppermint plants, and it is possible that even two months of fine weather might not enable these plants to recover sufficiently to give a normal yield until such time as the early autumn frosts start again, when the plants have to be cut or be ruined.

Westminster Wisdom

By the "C. & D." Parliamentary Representative.

FOOD PRESERVATIVES

Mr. Whiteley asked the Minister of Health, on June 15, whether the new regulations regarding preservatives in foodstuffs are based on evidence that anyone has ever suffered from boron preservative in food; and, if not, whether he is prepared to withdraw such regulations?

Mr. N. Chamberlain: The harmfulness of boron preservatives was thoroughly considered by the Departmental Committee which inquired into the subject. The report shows that boric acid in small doses has been known to produce ill effects, and that in continued doses it is likely to impair the health of the consumer.

WAGES IN CLINICAL THERMOMETER INDUSTRY

Colonel Day asked the Minister of Labour, on June 10, whether he is aware that in the clinical thermometer industry male workers of full age are being paid wages which average less than £2 for a full working week of from forty-eight to sixty hours; and is he prepared to accede to the request of the workers employed in that industry for the establishment of a trade board?

The Parliamentary Secretary to the Ministry of Labour replied that an inquiry was recently made into the earnings in this trade. The report of the inquiry is at present under consideration, and he is not yet in a position to say what action will be taken.

DEATH FROM STRYCHNINE

Colonel Day asked the Minister of Health, on June 16, whether his attention has been drawn to a recent case at the Billericay Isolation Hospital, Essex, where a patient named Joseph Drage died as a result of the administration of an overdose of strychnine by a temporary unqualified nurse; and will he take such action as will allow of only fully qualified nurses being allowed to administer poisonous medicines to patients undergoing hospital or institutional treatment?

The Parliamentary Secretary to the Ministry of Health said attention has been called to this most regrettable occurrence, and he has communicated with the Billericay Rural District Council, to whom the hospital belongs. He has no control over the internal administration of isolation hospitals, but he is informed that the district council are taking all possible steps to prevent the recurrence of such an accident.

SUPPLY OF "DANGEROUS" DRUGS TO SHIPS

Mr. Lougher asked the Minister of Health, on June 16, whether in respect of the issuing of certificates to enable masters of vessels to replenish their supplies of drugs scheduled under the Dangerous Drugs Act, 1920, the forms necessary for granting certificates will be drawn up in such a manner as to be fully understood by the masters of foreign vessels; and whether more adequate arrangements will be made by the Ministry to facilitate the detection of concealed drugs upon foreign vessels entering the various ports of the United Kingdom?

Mr. Locker-Lampson replied that the regulation does not prescribe the use of any form. Under the regulation all that the master has to do is to apply to the port medical officer and the medical officer is authorised to give him a certificate for such quantity as may be needed until the ship next reaches its home port. The second part of the question refers to the Customs administration, and he had no reason whatever for supposing the present arrangements to be inadequate.

Arran and the Kyles of Bute

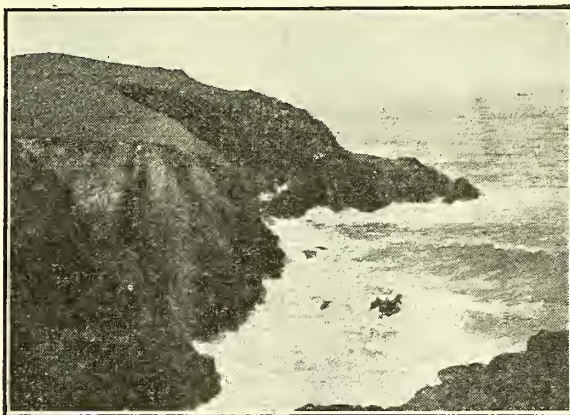
By R. CECIL OWEN, B.Sc.

The conference excursion around Arran, by way of the Kyles of Bute, is fixed for the afternoon of July 30. The usual plan, when time is not an object, is to sail from and return to Glasgow, as the short cut, via Wemyss Bay, leaves out views that are both interesting and beautiful. For the benefit of those who desire to sail from Glasgow, and join the excursion at Rothesay or elsewhere, or who at some other time during their stay in Glasgow wish to make the complete voyage, the whole of the route has been described by Mr. Cecil Owen.

THE Kyles of Bute! What a pleasant sound, suggesting beauty and romance in remote places! Pleasurable expectation is no wise dimmed by the reflection that "Kyles" (to Southerners, at any rate) is a word of doubtful meaning and unknown origin. A good dictionary, however, makes it plain that kyle is the Gaelic equivalent of strait or sound. The Kyles of Bute are thus the elbow-shaped straits separating the long and narrow island of Bute from the mainland. The coastline of Scotland, especially on the west, is broken up enormously. Long, narrow bays (which share with inland lakes the name of lochs) are driven far into the body of the country. Innumerable islands, ranging from mere rocks, scarcely uncovered at low tide, to stretches of country as big as a county, besprinkle the waters of its western seaboard. Thus it is that Scotland, with an area little more than half that of England, has a coastline computed to be five times as long. Again (in the west: the east is different), the coast is precipitous. High mountains raise their naked flanks abruptly from the water's edge. It is to this feature especially, which grows ever more pronounced as one moves northwards, that the grandeur of the scenery is due. The sea-loch below, the precipices above—scarred and seamed from top to bottom with gullies and ravines—compose an impressive and even an awesome spectacle.

We shall observe all these features as we proceed. Our route will be along the Clyde from Glasgow, through the Kyles of Bute, around Arran, and back by the Clyde again. We board our ship at the quay, just to the seaward side of Jamaica Bridge, known by the quaint name of Broomielaw. The ship first passes through the heart of industrial Glasgow. On both sides of the river, enormous ship-building yards, the purpose of which is clearly proclaimed by the presence of a multitude of gigantic steam-cranes of many types, line the bank. Here it was that the "Aquitania" and "Lusitania" were built, as well as the giant cruiser, "H.M.S. Hood," so familiar a name in the European war. Many other large works will be noted, including Singer's, of sewing-machine fame. At last we begin to leave industry behind, and get glimpses here and there of open country and grassy banks. A mass of rock, rising to some three hundred feet, is seen on the right bank. This is Dumbarton Rock, and upon it stand the remains of Dumbarton Castle, along with some miscellaneous and modern buildings. Wallace was imprisoned here; a similar fate nearly befel the great and valorous Bruce. Sir John Menteith was its English keeper, and of him Bruce demanded its surrender. Terms being agreed, the keys were handed over to Bruce, who was conducted over the castle. Meanwhile, Menteith had secreted a band of soldiers in a cellar, the plan being to trap Bruce, take him prisoner, and send him to London in a ship ready waiting in the Clyde. The Scottish leader, divining treachery, took the precaution to surround the castle, and himself took Menteith and his band prisoners, but afterwards secured their pardon. Mary Stuart set sail from here when, as a girl, she was sent to be educated at the French court. Many are the tales, thrilling and amusing, that are told of Dumbarton and its castle. Immediately beyond is the mouth of the river Leven, which connects Loch Lomond with the Clyde. Looking now in the direction of Loch Lomond (not itself visible), we see, apparently close at hand, yet in reality twenty miles away, the dome-like summit of Ben Lomond.

Transferring our attention for a while to the left bank, we shortly reach Port Glasgow, which is, in effect, a continuation of Greenock, three miles further along. Greenock is a port of some importance and of considerable animation. Its population is already 80,000, and is growing rapidly. Shipbuilding and sugar refining are the chief industries, but there are other large factories. It was the birthplace of James Watt, whose name has been given to docks and memorial buildings. It was the scene, too, of the death of Burns's Highland Mary, whose remains are at rest in the parish churchyard. Two miles further is Gourrock, which is sufficiently described as a little Greenock; interesting castles of greater or less age attract the antiquarian to its neighbourhood, notably Leven Castle, now in ruins. At Gourrock the Clyde estuary, which has, so far, run roughly east to west, turns through a right angle, and, ever widening, takes a southerly course to the open sea. Opposite Gourrock the traveller will take note of those long, narrow wounds in the coast line which, as has been mentioned, are known as lochs. Taking them in order, they are known



WEST COAST SCENERY

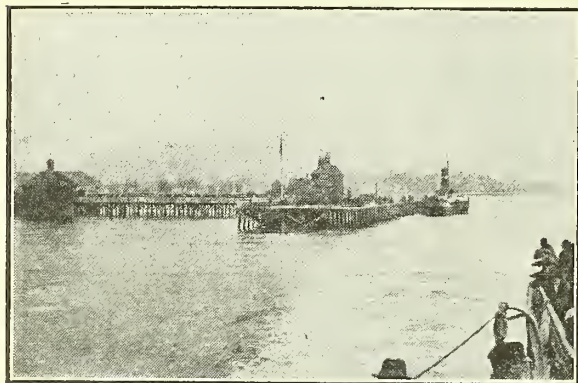
as Gareloch, Loch Long, and Holy Loch, the last-named being relatively short. Charming, seen across the water, is the little seaside town Helensburgh, with its background of low hills merging into higher and more distant uplands.

DUNOON AND ITS ASSOCIATIONS

Immediately to the south of the entrance to Holy Loch is the little town of Dunoon, famed for the beauty of its setting, and for its literary and historic associations. Like so many villages and small towns on the islands and peninsulas of the west coast, Dunoon could only be reached by rail with difficulty and delay, even if a railway were built. Therefore, until steam navigation put it within easy reach of Glasgow, it was an isolated spot, comprising a church and a few cottages only; whereas it is now a flourishing little seaside place, beloved of residents and visitors seeking rest and bracing air in a not too inaccessible spot. Highland Mary was born at a farm cottage a mile away. She is commemorated in a statue close to the pier, easily seen from the boat. Also to be thus observed are the slender ruins of Dunoon Castle, on rising ground near the shore. It is interesting to note that Mary Stuart visited Dunoon in 1563; while in 1646 the village was the scene of one of those massacres which occur more than once in Scottish history. The killers were the Campbells, and the victims the Lamonts. It is reported that thirty-six members of the Lamont family were hanged from one tree in Dunoon. Steaming southward, the traveller is struck by the quiet beauty of the peninsula on which Dunoon stands. The land rises gradually from the shore to a flat-topped ridge. A house here and there, a church, perhaps a mansion; tiny coves and cosy little stony beaches; occasionally a pier juts into the sea; on the water trim yachts and elegant steam launches; and, as a background to these

signs of a leisurely and peaceful existence, the green, well-wooded, gently sloping hillside. The next village of note is Innellan, a smaller and even more idyllic Dunoon—just a few houses, a single hotel, the ruins of an ancient castle—but in what a setting landward and seaward!

And now we turn Toward Point, with its little pier, and its fresh-looking lighthouse, and, steaming across the



DUNOON

sound for Bute, soon reach Rothesay, a populous watering place, often described as the Brighton of the West. At Rothesay we have returned to civilised life, with its crowds and bustle and sophisticated amusements. For Rothesay is "replete with every modern convenience" (as house-agents say) in the shape of boarding houses, hotels, esplanades, picture-houses, shops, taverns, cafés, public gardens, and a pier. But Rothesay is no mere Scottish Blackpool, for it has a long and fascinating history. The castle, for example, now also in the final stages of dissolution, was built in the thirteenth century upon the site of a former castle old enough to have been taken by the Danes. The Prince of Wales is, *ipso facto*, Duke of Rothesay, a title which dates from 1368, when Robert III created the title for his eldest son. The Marquis of Bute has a seat, Mount Stuart, five miles away; a modern though handsome house, the predecessor of which was burnt down in 1877.

IN THE KYLES OF BUTE

We do not break our journey here but, steaming northward, enter the famous Kyles of Bute. We have proceeded but a little way when we see a bifurcation of the sea. The long narrow bay is Loch Striven, running into the land for ten miles. We take the left-hand fork and enter the Kyles of Bute proper. The channel is narrow throughout, but the water is deep, permitting of the passage of large steamers. On the left is the island of Bute; on the right the mainland of Argyllshire. The two banks are in sharp contrast. The left is barren, rocky and deserted. The right bank is green, fertile, hospitable and inhabited without being overcrowded. Pleasant houses spring up here and there, with their well-kept gardens; and in close association are pleasure craft ranging from dinghies to ocean-going yachts. Now we approach the pleasant little hamlet of Colintrave—on the right bank—a mere handful of cottages with a pier and an inn. Looking ahead it seems as if our route were barred by high mountains. No way through them is visible. Proceeding yet further two alternatives offer themselves. A channel runs away to the right and another to the left. That on the right is Loch Riden, and is a *cul-de-sac*; that on the left leads to the open sea, and along it we go. In a couple of miles the channel widens, and in three miles more we are (as far as is possible in these waters) in the open sea. The peninsula on our right ends in Ardlamont Point. Were we to round the point we should be in Loch Fyne, running inland for forty miles and varying in width from four miles to a few yards. Look along Loch Fyne. On the left, some half-dozen

miles away, is Tarbert, a picturesque fishing village and holiday centre; while ten miles further on is Ardrishaig, which lies at the entrance of the Crinnan Canal, the waterway which brings Glasgow into direct connection with the West Highlands.

Our immediate business is, however, south. We are now in Bute Sound and have left narrow channels behind us for the rest of the voyage. Turning slightly to the right—i.e., slightly west of south—we reach the wide Kilbrennan Sound. Arran is now on our left. This small island—twenty miles long by eight wide—contains many lofty peaks, most of them observable from the boat, as for example Goatfell (2,865 feet), Ben Tarsum (2,706 feet), and Caim-na-Calliach (2,735 feet). And, although a southern island, its scenery is typical of the Highlands.

At the northern end of Arran we see a tiny inlet, Loch Ranza, where Bruce landed on one occasion. In "The Lord of the Isles," Scott says of it:—

On fair Loch Ranza streamed the early day,
Thin wreaths of cottage smoke are upward curled
From the lone hamlet, which her inland bay
And circling mountains sever from the world.

There are few villages on the western side of Arran, and they are of the tiniest. We can pick out Pirmill, a hamlet which was the scene of an abortive experiment in the manufacture of pirns or spools of thread; and behind it the twin summits of Ben Vrachie (2,330 feet) and Ben Pharain (2,345 feet). Further south is the entrance to the glorious Glen Iorsa, scarcely inferior in wild grandeur to Glencoe.

THE EAST COAST OF ARRAN

On we go past Drumodune Point, Brow Point and Iron Rock, Clachog Point, Bannan Head, Radda Island, with its two lighthouses, and Kildonan Point, till we find that we have rounded the south coast and are steaming northwards for Whiting Bay, Holy Island, Lamlash and Brodrick. We are now, of course, off the east coast of Arran and, perhaps because of its relative proximity to Glasgow and the more populated points of Scotland, it is itself the more populated part of the island. Whiting Bay, for example, is a refined variation of Rothesay. Lamlash is relatively a large place, with its pier, hotels, and numerous boarding houses. The harbour is guarded by the high rock of Holy Island. Passing Clachland Point and Corrygile Point we come to Brodrick Bay, where the lovely Glen Moy joins the sea. We pass the island of Little Cumbræ, a mere rock a mile and a-half by three-quarters of a mile, with its lighthouse; and Great Cumbræ, about four times as big as its lesser



A TYPICAL KYLES OF BUTE VIEW

brother, with its one little town or village of Millport. Just north of Cumbræ is Largs, a popular little seaside town on the Ayrshire coast. Eight miles further north is Wemyss Bay, where we may disembark.

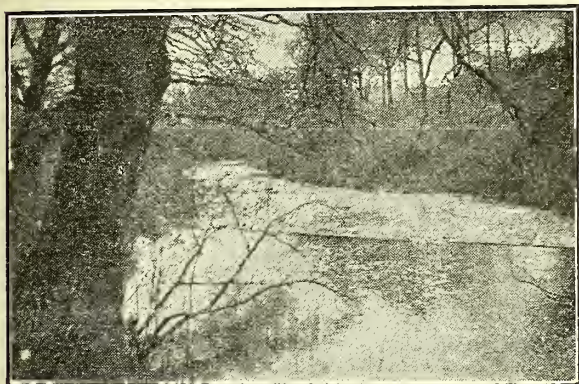
The photographs illustrating this article were taken specially for THE CHEMIST & DRUGGIST by Mr. R. Cecil Owen, B.Sc.

Loch Lomond

By R. CECIL OWEN, B.Sc.

The Conference Excursion to Loch Lomond is fixed for the afternoon of July 29.

IF Loch Lomond is only the second largest of Scottish lochs (for Loch Awe is three miles longer), it is by common consent the grandest of them all, as it is the most famous and best loved. It used to be known as Loch Leven, from the five-mile long river which connects it with the mouth



FRUIN WATER, LOCH LOMOND

of the Clyde. It is easy to imagine—without being deeply versed in geology—that this great lake was once a sea loch, and that what is now the River Leven was once a wide channel that filled Loch Lomond with sea water and made it tidal. Hence, perhaps, the impossibility of drawing a rigid line between the inland and the sea loch; hence, too, the justice of using the same name for both. Loch Lomond runs roughly north and south. At its lower end it is five miles broad, while at its northern extremity it tapers and merges into the stream which drains Glen Falloch. What features, then, make Loch Lomond the universal favourite among Scottish lakes, and justify its claim to be called the King of Lochs? First, its size; there is no English lake and only one in Scotland to rival it in this particular. Secondly, the lofty peaks that overlook it, especially towards the north; Ben Lomond, nearly as high as Snowdon, rises from its eastern bank, and Ben Vorlich (3,092 feet) from its western, while numerous summits, each more than two thousand feet high, look down upon its waters. Next, the immediate margin of the lake is richly timbered, so that the lake is well-nigh enclosed in a ring-fence of woodland; moreover, the woods scale the mountains in many places to great heights. Again, many glens run down the wooded slopes, their waters falling in cascades or rushing over boulder-strewn beds, or perchance being held up for a moment or two in deep pools beneath widespread branches. Finally, and perhaps most notably, numerous islands, many of them covered with trees, rise high above the surface, particularly at the south end.

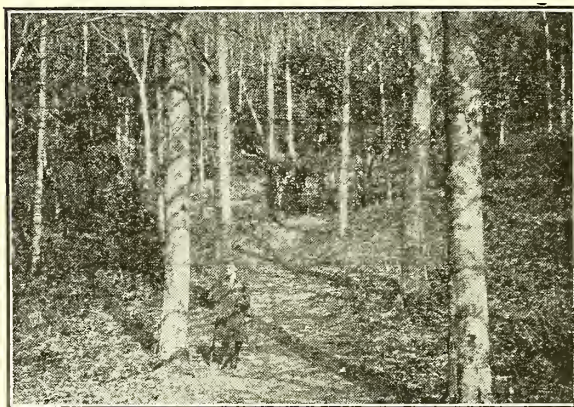
SOME OF THE ISLANDS

To the islands more than to any other feature is the romance and fascination of Loch Lomond due; a word or two about them will, therefore, not be out of place. Each one has a name which either begins or ends in "inch"—the Gaelic equivalent of "isle"; as Inchmurrin, Inchcruin, Creinch. At one time most of the islands were inhabited; to-day only one is farmed in the ordinary way, while all the remainder are, as far as is practicable, given over to sport. Inchmurrin, for example, has been converted into a deer park, while deer are to be found on several other islands and can occasionally, as when hard pressed by sportsmen, be seen swimming from one island to another. Birds and ground game offer good shooting on nearly all the islands; though it is well to note that here, as almost everywhere

in Scotland—even in the remotest places—the game is carefully preserved and free shooting or fishing is hard to come by (except, as to fishing, in the lochs themselves). One of the islands, Inchtavannoch, has a farmhouse upon it; but the explorer will observe that whatever of masonry remains on the other islands is mostly in ruins. Thus Inchmurrin—already referred to as a deer park—has upon it the ruins of a castle of the Earls of Lennox. On Inch Cailliach, the "Women's Island," once stood a nunnery and a burial ground where rested the bones of the Macgregors. Scott, in "Rob Roy," refers to the Macgregors as sleeping "beneath the green stane of Inch Cailliach." Inch Galbraith, a tiny island, shows conspicuously the ruins of a castle which must, surely, have covered the whole of it. Inch Tad and Inchcruin are partly under cultivation, while Inch Lonaig ("the island of yew trees") is rightly named, for the yews that grow upon it are numerous and magnificent.

Islands suggest promontories and many jut out into the lake. Too many of them, it may be, have been transformed into the parks that surround large mansions—for the public are thereby excluded from the foreshore for many miles and, moreover, high walls on the landward side too often shut out even a view of the water. This is especially noticeable and annoying to the pedestrian who proceeds along the western bank from Balloch. In this connection let us pay homage to the corporation of Glasgow for buying up one such estate for £30,000—that of Balloch Castle—and so giving the public free access to the Loch over a wide area which would otherwise have been barred against the common wayfarer. At the same time it is impossible not to admire the many fine mansions that have been erected upon or near the banks of the lake, as for example, Cameron House, Arden, Boturich Castle, and Rossdhu. The ill-informed Southerner, brought up in the belief that Scotland is a poor country, is surprised to encounter the evidences of wealth that are afforded by these magnificent country houses. There is one in particular which most explorers will desire to see—Ross Priory, in the ownership of Sir Alexander Leith-Buchanan, Bt.—for it was here that Sir Walter Scott wrote a great part of "Rob Roy," and here he stayed while gathering local colour for that work. Let us see what Sir Walter says of Loch Lomond:—

This noble lake, boasting innumerable beautiful islands, of every varying form and outline that fancy can frame, its northern extremity narrowing until it is lost among dusky and retreating mountains, while, gradually widening as it



A VISTA IN LOCH LOMOND WOODS

extends to the southward, it spreads its base around the indentions and promontories of a fair and fertile land, affords one of the most surprising, beautiful and sublime spectacles in nature.—("Rob Roy," chap. xxxvi.)

There is no lack of pleasure craft upon its waters, rowing boats, motor-launches of all sizes, and steamers large enough to provide meals on hotel lines being at the disposal of the tourist during the season. The most convenient as well as the cheapest plan is to board the railway company's steamer and traverse the whole length

of the lake from Balloch at the south to Ardlui at the extreme north. The boat zig-zags its way from side to side of the lake, calling at all the landing places of any importance (they cannot even be called villages) on either side. The only village is Balloch, the railway terminus. Here the River Leven at its junction with the loch is crammed with house-boats, the summer homes of those who, tied to the town for the greater part of the year, yearn for a close contact with nature for a few fleeting weeks. Besides house-boats, motor-vesse's, sailing yachts,



LUSS

steamers and rowing boats overcrowd the short stretch of river at Balloch, so that a passage through is a slow and by no means easy operation.

EXTENSIVE PANORAMAS

From Balloch we make for Balnata Pier on the eastern shore, passing by Inchmurrin, Creinch, and Torrinda, and between Clairloch and Inchcalloch. These are the best-wooded and most alluring of all the islands; while the mainland at Balnata, standing under Conie Hill (1,175 feet), its rocky shore surmounted by rich foliage, is truly a delight to the eye and a fount of refreshing memories. Then, we make for Luss on the opposite shore, skirting Inchfod, Caerdae (no bigger than a church) and Bucinch, and sailing between Inchlonnag and Inconnachan and past the mere rocks of Crengan Dubha and Fraoch Inch. Luss is almost a village, with its pier, church, post office, hotel, tiny store and houses. It is famous as a fishing centre. The use of the rod is free in the loch—but let the stranger beware of trying his luck in the magnificent trout streams that pour their waters into the loch—Glen Luss, for example, where, in due season, the trout may be seen leaping the rapids in thousands, a spectacle witnessed by crowds of curious visitors annually. Deer-stalking is enjoyed upon the surrounding hills, and it is no uncommon sight to see the animals moving across the high ground in single file. But Luss—so dear to walker, sportsman and artist—we must reluctantly leave and cross over to Rowardennan. A house or two and an hotel—such are the sole signs of civilisation at Rowardennan, apart of course from a multitude of craft upon the water; for this is a spot beloved of picnic parties, landing from a boat being an easy matter as the shore is flat and sandy, and provides a miniature beach. Spinneys close at hand afford shelter from rain or (possibly) from the sun. From Rowardennan begins the best and shortest route up Ben Lomond (3,192 feet), a noble hill with a domed summit which affords extensive panoramas and a specially fine view of Loch Lomond.

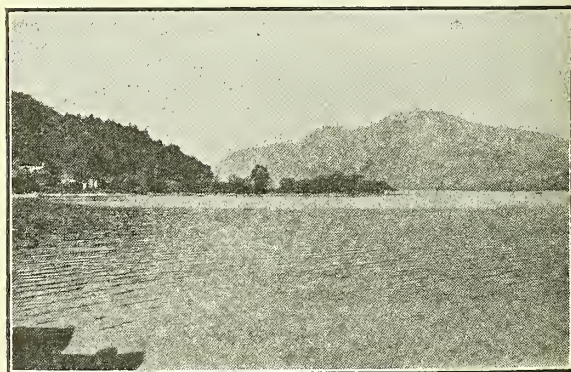
The loch has now narrowed to three-quarters of a mile. A ferry runs across from Rowardennan and, as if to shorten the distance, a peninsula pushes itself out from the opposite shore at Inverbeg, and down the middle of it Douglas Water, having run down the superb Douglas Glen, empties itself into Loch Lomond. Pursuing our way northward, we reach the half-dozen or so of houses which, with an excellent hotel, constitute Tarbet. Here the Highland Railway, having made a wide detour on its way out of Glasgow, reaches the west bank of the loch,

along which it proceeds to the head of the lake at Ardlui. The name Tarbet means "draw-boat"; and the story goes that in 1263 the King of Norway, one Haco, sailed round the north coast of Scotland, down the west coast and up the head of Loch Long, which is only about a couple of miles distant from Tarbet. He ordered his men to drag the boats over the intervening ground, whereupon he launched them afresh on Loch Lomond, and proceed to kill, capture or plunder the dwellers on the islands. Continuing our zig-zag course we reach in another three miles the spot marked Inversnaid, where there is little, in the way of habitation, apart from another fine hotel. Wordsworth paid at least one noteworthy visit to Inversnaid and there, as so many of his fellows have done in various parts of Scotland, he developed an interest in a certain "highland girl" (as he himself called her); and her graces are commemorated in the poem entitled "To a Highland Girl—At Inversneyde, upon Loch Lomond." Speaking of Inversnaid, which seems to have been, to Wordsworth, a mere background for his "fair creature," he refers to—

... these gray rocks; that household lawn;
Those trees, a veil just half-withdrawn;
This fall of water that doth make
A murmur near the silent lake;
This little bay; a quiet road
That holds in shelter thy abode. . . .

From Inversnaid a ferry runs across to Inverglas, where Inverglas Water, issuing from Loch Sloy, runs into the loch and where, also, are two small but interesting islands—Wallace's and Inverglas; upon the second are the ruins of a castle.

A mile north of Inversnaid, close to the lake's margin, and not too easy to find, is Rob Roy's Cave, where the outlaw is supposed to have lived in hiding for a while. Two miles further is a small island worth close inspection. Known as Island Vow, it bears upon its rocky surface the remains of a fortified castle. Its curious name is a corruption of Eilan Vhow, meaning the brownie's isle. In the intervals of love making, Wordsworth paid some attention to it, and has expressed his thoughts in his poems "The Brownie's Cell" and "The Brownie." Half a mile further—on the western shore—is the Pulpit Rock, justly named since the rock has been so cut as to form an actual pulpit which has been used for open-air preaching. Two miles more and we reach the narrow head of the loch at Ardlui, with its pier and its commodious hotel; and where, as we have seen, Scott described the



BEN LOMOND FROM LOCH LOMOND

loch as narrowing itself till it is lost among dusky and retreating mountains.

We have now completed our tour of the lake. Most of us will register a secret vow to return and, selecting some particular point, make it the basis of a more complete, if restricted, exploration.

The photographs illustrating this article were taken specially for THE CHEMIST AND DRUGGIST by Mr. R. Cecil Owen, B.Sc.

Trade Report

The prices given in this section are those obtained by importers or manufacturers for bulk quantities or original packages. To these prices various charges have to be added, whereby values are in many instances greatly augmented before wholesale dealers receive the goods into stock, after which much expense may be incurred in garbling, packing, etc. Qualities of chemicals, drugs, essential and fixed oils, and many other commodities vary greatly, and higher prices than those here quoted are charged for selected qualities of natural products even in bulk quantities.

42 Cannon Street, E.C.4, June 18.

ALTHOUGH no decided improvement in business is reported, the better tone noted last week is maintained in the produce markets. Chinese items command more interest in view of the troubled state of affairs in that country: star anise oil is held for higher prices, and Tonquin musk, which was weak, has now a firm undertone, although quiet. Rhubarb remains firm: wood oil and soy are held for higher prices. Menthol has been in better demand on the spot and Japanese mint oil has advanced. Much higher prices are asked for American peppermint oil, but sellers are few. Lemon has been in good seasonable demand at rising prices: West Indian lime oil is dearer. Agar agar, ergot, senega and turmeric are easier on spot: new cascara is again slightly cheaper on c.i.f. terms. Cod-liver oil is very firm, prices showing a wide range. Among pharmaceutical chemicals, business has been fair. Citric and tartaric acids and hydroquinone find an increasing demand. Bromides are the turn easier. Acetanilide, guaiacol carbonate, milk sugar, sulphonal and tannic acid are cheaper. Among industrial chemicals, a number of products have declined, these including sal ammoniac, acetate of soda and ammon. chloride. Lead products, such as white and red lead, litharge and lead acetate are higher. Potash chlorate is still scarce and dearer. Formaldehyde, acetic acid and arsenic are dull and weak. In the fixed oil group, business has been less brisk, but most items are fairly steady. Linseed oil and turpentine are cheaper. Castor is nominal, and palm is rather lower: acid oils are slightly higher. Other changes include a decline in shellac and a firmer market for mercury.

Higher	Firmer	Easier	Lower
Cocoa butter	Ginger (W. Afr. c.i.f.)	Agar agar	Acetanilide
Cod liver oil	Lactic acid	Bromids	Ammon. chlor.
Hydroquinone	Lemongrass oil	Caraway seed	Castor oil
Lead acetate	(Cochin, c.i.f.)	(Dutch)	Geranium oil
Lemon oil	Menthol	Cascara	(Alg.)
Lime oil	Mercury	sagrada	Milk sugar
Litharge		Citronella oil	Patchouli oil
Peppermint oil		(Cey.)	Sal ammoniac
(Amer.)		Ergot	Shellac
Red lead		Guaiacol carb.	Sodium acetate
Soy		Lavender oil	Sulphonal
White lead		(Fr.)	Turmeric
Wood oil		Linseed oil	Turpentine
(Hankow)		Methyl sulphonal	
		Palm oil	
		Potash bromide	
		Pyridine	
		Senega	
		Tannic acid	
		(B.P.)	

Cablegrams

NEW YORK, June 17.—Business is fair. Menthol has advanced to \$11.25 per lb., and peppermint oil in tins to \$18.00 per lb. Mexican sarsaparilla is dearer at 22c., and stramonium leaves have advanced to 9½c. per lb. Mercury is higher at \$83.50 per flask. Taraxacum is cheaper at 17½c. per lb., and euonymus (wahoo) bark and root has declined to 75c. per lb.

BERGEN, June 17.—The total catch of cod for the whole of Norway since the opening of the season amounts to 58,600,000, against 67,000,000 for the corresponding week of last year, and the yield of non-freezing steam-refined medicinal oil is 90,950 hectolitres, against 111,748 hectolitres last year. The market for finest steam-refined non-freezing medicinal oil is firm at 148s. per barrel c.i.f. London.

Exchange Rates on London

The following is a list of Continental and other exchange rates against the pound sterling on London prevailing at 4 p.m. on Wednesday:—

Place	Method of Quoting	Par of Exchange	June 10	June 17
Amsterdam	Fl. to £	12.107	12.09½—12.09½	12.10—12.10½
Berlin	M. to £	20.43	20.41—20.43	20.41—20.43
Brussels	Fr. to £	25.22½	100.50—100.60	103.00—103.10
Calcutta	Per rup.	24½	18½d.—18½d.	18½d.—18½d.
Constantinople	Pst. to £	110	900—910	910—920
Greece	Dr. to £	25.22½	292—295	292—294
Hong Kong	T.t. \$	—	27½d.—27½d.	27½d.—27½d.
Italy	Lirc to £	25.22½	122½—122½	128½—128½
Kobe	Yen	24.58d.	20½—20½d.	20½—20½d.
Lisbon	Escu.	53½d.	2½d.—2½d.	2½d.—2½d.
Madrid	Pts. to £	25.22½	33.21—33.24	33.32—33.33
Montreal	\$ to £	4.86½	4.85½—4.86	4.85½—4.86½
New York	\$ to £	4.86½	4.86—4.86½	4.86—4.86½
Oslo	Kr. to £	18.159	28.83—28.88	28.75—28.78
Paris	Fr. to £	25.22½	99.50—99.60	102.00—102.10
Singapore	Per dol.	—	28½d.—28½d.	28½d.—28½d.
Switzerland	Fr. to £	25.22½	25.03—25.04	25.02½—25.03½
Vienna	Sh. to £	24.02	34.50—34.55	34.50—34.55
Warsaw	Zloty to £	25.22½	25.20—25.35	25.20—25.35

Crude Drugs, etc.

AGAR AGAR is slightly easier, No. 1 Kobe offering at 4s. 8d. per lb., and seconds at 4s. 5d. on the spot.

ALMONDS.—Both Persian and Morocco continue to rise in value, the spot prices being 170s. and 160s. per cwt. respectively.

ALOES.—Cape show no alteration at from 42s. 6d. to 44s. per cwt. for good seconds and firsts respectively.

ANTIMONY.—There is little alteration, but the undertone is firm. Regulus on the spot is £61 10s. to £62, and c.i.f. terms vary from about £55 to £58 10s., according to shipment or arrival. English regulus is quoted £62. Crude continues firm and scarce on the spot at £50 per ton.

BALSAM CANADA is offered at from 5s. 4d. to 5s. 6d. per lb. on the spot.

CADMIUM.—The market is well supplied, but importers still ask 2s. 3d. to 2s. 4d. per lb.

CAMPOR.—Refined is steady at 2s. 9d. per lb. on the spot and for June-July shipment 2s. 8d. c.i.f. is quoted. Crude is 2s. 6d. spot and 2s. 4d. c.i.f. for June-July shipment.

CARAWAY SEED is slightly easier, new crop Dutch, for August-September shipment, offering at 31s. per cwt. c.i.f.

CARDAMOMS.—An auction sale of 160 cases Indian will be held on Thursday, June 18.

CASCARA SAGRADA.—New crop for August-September shipment is slightly cheaper, sellers quoting 49s. per cwt. c.i.f.

CLOVES are firm, Zanzibar offering on the spot at from 10½d. to 11d. per lb. To arrive, August-October shipment has been sold at 10½d. c.i.f. and October-December at 10d. per lb. c.i.f. The landings in London during the week ending June 6 amounted to 29, and the deliveries 121, leaving a stock of 13,157, against 35,772 in 1924 and 18,117 in 1923. The landings so far this year have been 7,043, against 35,383 in 1924, and the deliveries 8,890, against 18,988 bales in 1924.

COCOA BUTTER is dearer, prime English having been sold at up to 1s. 6d. per lb.

COD-LIVER OIL.—Our Bergen correspondent writes on June 15 that the codfishery at Finnmarken is satisfactory at some places, but mostly very moderate in volume. The total output of all the Norwegian codfisheries, compared with that of the previous years, is as follows:—

To	Catch of cod	Yield of steam-refined cod-liver oil	Livers for crude oils
June 6, 1925	56,900,000	87,945 hectol.	9,535 hectol.
" 7, 1924	65,300,000	108,277 "	16,144 "
" 9, 1923	48,200,000	81,012 "	16,847 "
" 3, 1922	46,800,000	77,769 "	14,712 "
" 4, 1921	38,100,000	56,215 "	12,656 "

The market is quiet, and the official quotation is nominal, at 147s. per barrel, c.i.f., London. In London, agents'

quotations vary considerably, ranging from 139s. to 150s. per barrel, c.i.f. U.K. ports.

ERGOT is easier at from 1s. 7d. to 1s. 8d. per lb. on the spot for good sound Spanish.

FENNEL SEED.—East Indian on the spot is quoted at round about 32s. 6d. to 35s. per cwt.

GINGER.—West African continues in fair demand at about 65s. per cwt. on the spot, and for June-July shipment the higher price of 61s. c.i.f. has been paid.

IPECACUANHA remains firm at 8s. 3d. per lb. for fair Matto Grosso on the spot.

LIME JUICE.—West Indian raw, good to fine, is offered on the spot at 2s. 6d. to 2s. 9d. per gallon, being unchanged.

LOBELIA HERB of the new crop is offered at about 1s. 5d. c.i.f.; spot is 2s. 1d. per lb.

ORRIS is in limited demand, fair Florentine sorts offering at 34s. 6d. per cwt., and Verona at about 32s. 6d. per cwt.

MENTHOL.—The spot demand has improved somewhat, sellers quoting Kobayashi-Suzuki at 42s. 6d. to 43s. per lb., and July-September shipment at 40s. c.i.f.

MERCURY has hardened again with a fairly active inquiry. Current quotations are about £13 17s. 6d. to £14 per bottle. The export demand has been quieter this week, but there is rather a strong feeling. There are only few c.i.f. offers reported for near shipment, sellers asking about £13 10s. per bottle. There is no doubt that the stocks at this end were further reduced in May, for which the receipts were officially returned at only 1,103 bottles, against which 913 bottles were re-exported. The total imports for the five months amounted to 9,354 bottles, compared with 14,050 bottles in the corresponding period in 1924.

MUSK.—There is a fair quantity Tonquin musk available on the spot, and the Chinese trouble does not appear to have affected the market so far, except that the previous weak undertone has disappeared. Pile I selected pod is offered at 82s. per oz.

RUBBER has passed through a quieter period, and at the beginning of the week prices eased fully 3d. per lb. for the spot and June positions. At the close a firmer tone manifested itself, and the forward positions considerably improved. The easing off was due to the sudden lack of demand for spot, and holders of June rubber were anxious to realise before any possible "break." At the moment the position is difficult to follow, as the requirements by America and the Continent over the next few months is the main point that will regulate prices. As far as one can see there is little prospect of any substantial increase in stocks taking place in the near future, and this will certainly tend towards keeping prices fairly steady. For the first time for many weeks the arrivals exceeded the deliveries, and last week there was a small increase in the stocks of 175 tons. The London stock now stands at 5,631 tons. Quotations (Wednesday, 5 p.m.): No. 1 standard ribbed smoked sheet, spot and June, 3s.; July-September, 2s. 7½d.; October-December, 2s. 3¾d. per lb.

SAFFRON is dearer at 130s. per lb. for finest Valencia on the spot.

SEEDS.—The seed market remains firm but inactive at the following prices:—ANISE.—Spanish, 62s. 6d.; Russian, 50s. to 55s.; Levant, 50s. CANARY SEED.—Mazagan firm with sellers at 29s., and good bold Spanish at 36s. CORIANDER SEED is firm, with sellers at 21s. c.i.f. for Morocco, and 25s. for spot. CUMIN SEED has sellers at 55s. for Malta and 52s. 6d. for Morocco. On the spot 50s. c.i.f. is quoted to arrive. Good clean East Indian is 50s. to 52s. 6d. per cwt. DILL SEED is steady at 20s. on the spot. HEMPSFED.—Manchurian is 17s. spot. LINSEED.—Morocco is 25s. 6d. per cwt. MUSTARD SEED.—English is 32s. 6d. to 35s. per cwt.

SENEGA is obtainable at 2s. 2d. per lb. on the spot, and new crop is about 2s. 3d. per lb. c.i.f.

SERPENTARY ROOT is offered at 3s. 9d. per lb. on the spot.

SHELLAC is again lower, following on a decline in Calcutta to rs. 90 paid. The London spot market has been quiet at 240s. per cwt. for usual standard TN orange (a decline of 10s.); fine second orange is 290s.,

superfine 345s., pure button 290s., and AC cakey 240s. Sales for delivery include August at 205s., October at 200s. to 205s., and December at 202s. 6d. to 200s. TN for June-July shipment closes at 19½s. 6d. c.i.f.

SOY.—Good Chinese brands are quoted at the higher price of from 3s. to 3s. 2d. per gallon, duty paid.

STARCH PRODUCTS, ETC.—Dutch maize starch powder (cornflour) is steady at 19s. 6d. per cwt., American is 19s. 6d., and pearl starch 19s. per cwt. net on the spot. American maize starch crystals is 21s. 6d. net, and Dutch crystals is 22s. 6d. per cwt. English rice starch crystals is 36s., German 27s. 3d., and Dutch 26s. 9d. per cwt. Dutch farina is 19s. 9d. for superior, and to arrive is 19s. per cwt. f.o.b.; superior Dutch (maize) dextrin is 26s. 6d., and No. 2 24s. 9d. American canary dextrin is 23s., and white 22s. 9d. per cwt., ex store, London.

TARAXACUM.—Foreign to come forward is offered at about 75s. per cwt. c.i.f.

TURMERIC is cheaper, both on the spot and to arrive; value of fair bright Madras finger is about 42s. 6d., with business thereat, and up to 45s. is quoted. June-July shipment is 32s. 6d. c.i.f. Cochin split bulb is 22s. 6d. spot.

VALERIAN ROOT.—Belgian is selling at about 1s. 9d. per lb., and forward shipment is about 1s. 7½d. c.i.f. Indian to come forward is offered at about 60s. c.i.f.

VANILLA.—At auction, on June 12, 69 tins Bourbon offered and eight sold at from 8s. to 11s. 6d. per lb. for very mouldy; four tins good firsts Madagascar were offered and brought in.

WITCH HAZEL EXT. is quoted by importers at 9s. 3d. per U.S. gallon, duty paid.

Essential Oils

BUSINESS continues fair this week and price changes are numerous. Lemon oil is dearer and the spot market is better since distressed parcels have been liquidated. West Indian lime is scarce and dearer, and American peppermint has sharply advanced. Cochin lemongrass is dearer to arrive. Ceylon citronella is easier in response to buyers' offers. French lavender oil is also easier. Algerian geranium new crop is cheaper, and patchouli oil has been reduced in price.

The following are the quantities and values of the essential oils (other than turpentine) imported into and re-exported from Great Britain during May 1925, compared with the same month in 1923 and in 1924, also for the five months ended May 31, 1925:—

		1923	1924	1925
May imports (other	lb.	365,544	506,187	375,788
than turpentine)	.. value	£109,646	£130,777	£115,613
Jan.-May imports	do. lb.	1,664,222	1,848,399	1,907,291
	value	£418,209	£476,773	£605,448
May re-exports	do. lb.	93,242	119,953	92,812
	value	£51,586	£48,299	£36,173
Jan.-May re-exports	do. lb.	399,796	466,538	449,478
	value	£170,699	£162,655	£167,097

ANISE (STAR).—There have been a few sales to consumers of "Red Ship," and several Continental orders have been filled. Up to 2s. 9d. has been paid. The market in China is quite firm, with c.i.f. offers much above the spot parity.

BERGAMOT on the spot is unchanged at from 14s. 9d. to 15s. 6d. per lb. for 37 to 38 l.a., according to brand.

CARAWAY.—Dutch double rectified is offered on the spot at from 8s. 6d. to 9s. 6d. per lb. German is quoted at from 7s. 6d. to 8s.

CASSIA on the spot is unchanged, with sellers at from 8s. to 8s. 3d. per lb. for 80 to 85 c.a. For shipment 7s. 3d. to 7s. 4d. is quoted.

CITRONELLA.—Ceylon is weaker on the spot at from 2s. 5d. to 2s. 6d. per lb., and c.i.f. to arrive at 2s. 3d. Java oil is unchanged at 4s. spot and 3s. 11d. c.i.f.

CLOVE.—English or Indian distilled is unchanged on the spot at 6s. 3d. to 6s. 9d. per lb., according to quantity.

CORIANDER.—Russian-Hungarian oil is offered on the spot at 27s. per lb.

EUCALYPTUS on the spot is quiet at from 1s. 9½d. to 1s. 10d. per lb. for 70 to 75 per cent.

GERANIUM.—Bourbon oil, which was offering down to about 145 fr. per kilo c.i.f. from Réunion recently, has advanced to 155 fr. (= about 14s. per lb. approximately). On the spot, from 16s. 6d. to 17s. is quoted. Fair arrivals of new crop Algerian have taken place, and spot is weaker, with offers at 22s. 6d. For a line, this could be shaded.

LAVENDER.—French oil, 38 to 40 per cent., is cheaper in some directions, owing to the decline in the franc, holders quoting from 26s. to 28s. per lb.

LEMON is in fair seasonable demand and is dearer at from 3s. 6d. to 3s. 9d. per lb. for good quality oil. For forward shipment from 3s. 8d. to 3s. 10½d. upwards, c.i.f., is quoted.

LEMONGRASS.—Cochin is unchanged at 4s. 3d. per lb. on the spot, and for shipment the higher quotation of 3s. 4½d. c.i.f. is now asked.

LIME.—West Indian distilled is dearer, with sales at from 8s. 9d. to 9s. per lb.; 9s. 3d. to 9s. 6d. is now asked. Hand-pressed is apparently unobtainable and nominal at 20s.

MINT.—Japanese dementholised Kobayashi-Suzuki is dearer on the spot with up to 15s. per lb. reported paid. Sales of August-October have been made at 13s. 6d., and 13s. 10½d. is now asked. July-September is offered at 14s. 3d. c.i.f.

MUSTARD.—Natural essential is quoted on the spot at from 23s. to 24s. per lb. in quantity. *Synthetic* is 14s.

PALMAROSA is unchanged with sellers on the spot at 13s. to 13s. 3d. per lb.

PATCHOULI.—There has been some inquiry recently for Singapore; usual quality is offered at from 13s. to 13s. 6d. per lb., being cheaper.

PEPPERMINT.—American natural tin oil continues to arouse interest, owing to the rapidly advancing prices cabled from N.Y., up to \$20.00 having been quoted in one instance. Business, however, is not likely to be effected at such a high price until more definite news is available. We understand that small sales have been made at below 35s. c.i.f. for new crop; but apart from this there appears to be no firm offers on the market at the moment. For prompt shipment, business was done at 67s. 6d. c.i.f., but this could not now be repeated. The spot market is irregular, with supplies very scarce, and from 65s. to 75s. is quoted, according to brand and seller. H.G.H. to arrive shortly is offered at 85s. per lb. London terms.

PETITGRAIN.—Paraguayan on the spot is unchanged, with holders quoting at about 8s. 6d. per lb.

SPEARMINT.—American has advanced, 22s. 9d. per lb. c.i.f. to arrive being quoted for shipment.

The following arrivals have taken place from the countries named during the period June 11 to 17 inclusive:—Bergamot (It.), 2 cs.; bois de rose (Fr.), 5 cs.; camphor (Germ.), 1 dm.; citronella (Jv.), 16 dm.; dill (Germ.), 1 cs.; eucalyptus (Aust.), 19 cs.; geranium (Alg.), 8 cs., 3 dm., (Fr.), 2 dm.; guaiacwood (Germ.), 6 cs.; lavender (U.S.) 1 dm., (Fr.) 11 cs.; lemon (It.), 22 cs.; lime (Holl.), 2 cs.; mint (Jp.), 15 cs.; orange (R.W.I.) 5 cs., (It.), 2 cs.; orris (Fr.), 6 cs.; peppermint (U.S.), 4 cs.; pimento (Germ.), 3 cs.; pimento leaf (B.W.I.), 1 dm.; rosemary (Sp.), 1 dm.; sandalwood (Aust.), 35 cs.; vetiver (Fr.), 1 cs.; wormseed (U.S.), 1 cs.; undescribed, (U.S.) 28 dm., (Fr.) 11 cs.

Pharmaceutical Chemicals, etc.

THERE is no decided change in the spot position; business has been fair, with hydroquinone, citric and tartaric acids finding an increasing demand. Bromides are a point cheaper.

ACETANILIDE shows a sharp fall after last week's firmness, and is now quoted in quantities at 1s. 6½d. and 1s. 8d. for small lots.

AMIDOPYRIN remains slow with dealers' quoted prices in the region of 13s. 9d. to 14s. per lb.

ASPIRIN.—A fair business has been transacted with prices at about 2s. 7½d. to 2s. 8½d. per lb., according to quantity.

BARBITONE meets with but small demand at close up to 11s. 6d. per lb. spot.

BENZALDEHYDE (0.03) remains quiet with dealers offering on spot at about 3s. per lb.

BENZOIC ACID (B.P.).—It is doubtful if any supplies practically free from chlorine are available on spot. There is a general demand, but the Board of Trade will not grant licences for the import of adequate quantities. More or less nominal at 2s. 11d. per lb.

BENZONAPHTHOL is dull with dealers' prices unchanged at about 3s. 5d. to 3s. 9d. per lb.

BETANAPHTHOL.—Resublimed on spot is offered at about 3s. per lb. with business slow.

BROMIDES.—Prices on spot are rather easier this week: ammonium, about 2s. 4d. to 2s. 6d. per lb.; potassium, B.P. crystals and granular, about 1s. 11d. per lb.; sodium, B.P. crystals and granular, about 2s. 1d. to 2s. 2d. per lb.

CALCIUM LACTATE is steady with a fair business about. Dealers' prices are at about 1s. 7d. to 1s. 9d. per lb., and slightly less for large quantities.

CHLORAL HYDRATE.—Dealers are quoting on spot at about 3s. 6d. to 3s. 7d. per lb., and would probably accept less for good business for duty-paid crystals. Market is slightly easier.

CHLOROFORM.—British makers quote from 2s. 5½d. to 2s. 7½d. per lb., according to quantity.

CITRIC ACID (B.P. CRYSTALS).—Although we have now had a long spell of warm weather, which should have brought a big demand, the market has not yet been really busy. It would seem that consumers have a lot of old stocks to work off. Dealers are now finding more business, and their prices are firm at from 1s. 4d. to 1s. 4½d. per lb., less 5 per cent., with higher prices possible.

CREOSOTE (B.P.) is dull with prices in the region of 2s. 2d. per lb. spot.

CREOSOTE CARBONATE remains quiet with dealers' prices unchanged at 6s. 6d. to 6s. 9d. per lb.

FERRI AMMON. CIT.—Makers quote B.P. at 1s. 11d.; to 2s. 3d. per lb., green at 2s. 6d. to 2s. 11d., and U.S.P. at 2s. to 2s. 2d. per lb.

GUAIACOL CARBONATE is slightly cheaper on spot as quoted at 7s. to 7s. 3d. per lb.; market dull.

HEXAMINE is unsettled and conditions point to rather cheaper prices in the future. Dealers continue to quote on spot at 2s. 7d. to 2s. 8d. per lb. Continental quotations run about 3s. 9d. to 3s. 10d. per kilo, f.o.b.

HYDROQUINONE shows a further advance after a week of brisk business. Dealers' prices are now up to 4s. 2d. to 4s. 3d. per lb.

LACTIC ACID (B.P.) is steadier this week at 2s. 6d. per lb. and upwards spot. Technical, 50 per cent. by weight, £42 per ton net, spot.

METHYL SALICYLATE is unsteady on quotation from 1s. 5½d. to 1s. 6½d. per lb., in carboys: in bottles for small lots up to 1s. 9d. per lb.

METHYL SULPHONAL shows little life with dealers offering from about 18s. per lb.

MILK SUGAR.—Further reductions in spot prices for American and Dutch are recorded. B.P., finest Dutch, 77s. per cwt.; five cases, 75s. 6d.; ten cases, 75s. per cwt. B.P. American, in 200-lb. barrels, 75s. per cwt.

PARAFORMALDEHYDE (100 per cent. powder) remains dull and unsteady as quoted at 2s. per lb.

PARALDEHYDE.—Business is fair and market steady: in carboys, 1s. 1½d. to 1s. 2d. per lb.; in cases, 1s. 4d. and 1s. 3d. per lb. in cases.

PHENACETIN.—Business continues in a moderate way, but prices are being cut: quoted at about 4s. 4d. to 4s. 7d. per lb., according to quantity.

PHENAZONE.—There has not been any big business on the market, but dealers' prices continue fairly steady at about 6s. 3d. to 6s. 5d. per lb.

PHENOLPHTHALEIN is offered at irregular prices on spot from 4s. 4d. up to 4s. 9d. per lb.: business slow.

POTASSIUM PERMANGANATE (B.P.) continues steady with business passing at about 7d. per lb., in drums.

RESORCIN is steady as quoted at 4s. 5d. to 4s. 9d. per lb., with some occasional call on the market.

SALICYLIC ACID (B.P.) continues steady, but there is a good deal of price cutting. Large quantities, 1s. 2½d. to 1s. 3½d. per lb.; ordinary quantities, about 1s. 3½d. to 1s. 4½d. per lb.

SALOL has remained dull, and dealers' prices quoted at about 3s. 6d. to 3s. 7d. per lb. might be shaded.

SODIUM BENZOATE (B.P.).—A scarcity of supplies is the chief feature, with prices again dearer at 1s. 11½d. to 2s. 3d. per lb.

SODIUM SALICYLATE (B.P.).—Business has been very fair and the spot position steady. Powder in large quantities is about 2s. to 2s. 1d. per lb.; crystals and flakes, 2s. 2d. to 2s. 3d. per lb.

SULPHONAL is rather cheaper on a dull market: dealers quote at 12s. 7d. to 12s. 8d. per lb.

TANNIC ACID (B.P. lev'ss) shows a reduction with spot offers at 2s. 9d. to 2s. 10d. per lb.

TARTARIC ACID (B.P. CRYSTALS).—Better business is recorded and dealers' prices are gradually hardening: they now quote at about 1s. to 1s. 1d. per lb., less 5 per cent., according to quantity; British makers are reported to be quoting at about 1s. 0½d. to 1s. 1d. per lb., less 5 per cent.

TERPIN HYDRATE remains quiet on spot with dealers quoting at 1s. 7½d. to 1s. 8½d. per lb.

THYMOL is rather firmer this week, and few spot offers are made under 15s. 6d. per lb., while some are up to 15s. 9d. for small lots.

VANILLIN (100 per cent. from cloves) is steadier with dealers' prices inclined to move up to 23s. 9d. to 24s. 3d. per lb.

Among the chemicals which have paid Key Industry duty are the following:—Acetic anhydride, £383; phenacetin, £394; sodium salicylate, £233; undescribed chemicals, £3,037.

Industrial Chemicals, etc.

London, June 17.

SOME important changes are recorded this week. Sal ammoniac, sodium acetate and ammonium chloride are cheaper. Lead products are higher. Formaldehyde and acetic acid remain weak and dull. Chlorates are again dearer and scarce on spot and on the Continent. Cornish arsenic remains flat.

ACETIC ACID is finding nothing but small business on spot, and as quoted is none too steady: 80 per cent. technical, £39; 80 per cent. pure, £40 per ton, in barrels; 99 to 100 per cent. glacial (pharmaceutical), £67 per ton, in glass demijohns, ex wharf, London.

ACETONE continues quite active and prices for B.G.S. are firm at from £75 per ton, in drums.

ALUM is rather dull at £9 5s. per ton for lump in casks on the spot.

AMMONIA ALKALI (58 per cent. light alkali).—British makers' price for home consumers remains at £6 15s. per ton, in free bags, f.o.r. works.

AMMONIA (ANHYDROUS).—The demand has been much heavier, due to the spell of warm weather. Dealers' prices for 99.95 per cent. on spot in loaned cylinders is firm at 1s. 4½d. per lb.

AMMONIUM CHLORIDE is cheaper with dealers offering at £26 10s. per ton for grey galvanising, in casks, spot; market now steady.

ARSENIC.—The mines' quotation for Cornish white powdered continues at £21 to £21 10s. per ton, f.o.r. Export business is not in evidence, and home demands are small.

BARIUM CHLORIDE (98 to 100 per cent. prime white crystals) is finding but little business on spot as offered at £10 to £10 10s. per ton.

BARYTES is steady, but in no great demand; quoted at £3 5s. to £6 5s. per ton, according to quality.

BLEACHING POWDER is dull, with prices unchanged at about £3 10s. per ton for 35 to 37 per cent. available chlorine.

COPPER SULPHATE.—The export demand has remained dull, but the tone is quite steady, makers' terms varying from £24 15s. to £25 5s. a ton f.o.b. for casks, less 5 per cent. discount. The market is now, of course, between seasons, and manufacturers' operations are on the light side. Continental quotation for shipment is about £23 per ton f.o.b., and less for quantities.

CREAM OF TARTAR has been fairly active in small lots, with dealers' prices at about 78s. per cwt., less 2½ per cent.

EPSOM SALT meets with occasional business on spot as offered at £4 10s. to £4 12s. 6d. per ton, in bags. Continental prices for shipment in quantities cheaper.

FORMALDEHYDE is lifeless and quotations in the region of £40 per ton for 40 per cent. by volume are nominal.

GLAUBER'S SALT is by no means active: dealers offer commercial quality in single bags at £3 10s. to £3 12s. 6d. per ton.

LEAD PRODUCTS are higher, but the market remains dull: lead acetate, brown, £42 10s.; white, £44 per ton; litharge,

imported, £40 10s.; red lead, £40; white lead, dry, £39; ground in oil, £41 per ton, c.i.f. London.

OXALIC ACID has been dull for some little time, but spot prices are steady at 3½d. per lb.

POTASH CAUSTIC is very steady at £30 per ton for 88 to 92 per cent. solid in drums.

POTASSIUM CARBONATE continues to find business, with dealers' prices very steady: 90 to 92 per cent., £24 to £24 5s.; 96 to 98 per cent., £25 7s. 6d. to £26 10s. per ton, in casks, spot.

POTASSIUM CHLORATE.—Continued scarcity of supplies here and on the Continent is the chief feature. Prices are now up to as much as 4½d. to 4½d. per lb.

POTASSIUM PERMANGANATE.—Commercial quality is steady at 6d. to 6½d. per lb. in drums.

POTASSIUM PRUSSIAN remains dull, with the spot price at 7½d., and about 7d. per lb. for quantities to come forward.

SAL AMMONIAC.—All grades are cheaper; the market is now steady and business quite good: dog-tooth crystals, £37; medium, £35; fine white crystals, £22 per ton, in casks.

SODIUM ACETATE is cheaper as offered ex store at about £20 per ton; shipment prices are easier.

SODIUM HYPOSULPHITE has been in fair demand and prices are steady. Pea crystals, photographic, £13 10s. per ton, in one-cwt. kegs; commercial quality, in casks, £9 per ton, in casks; British makers quote at £14 to £15 per ton, d/d.

SODIUM NITRATE is finding very little business in London: 96 per cent. quoted at £12 12s. 6d., and refined at £12 17s. 6d. per ton, f.o.r. docks. Manchester prices same as London; Bristol prices slightly cheaper.

SODIUM NITRITE (100 per cent. basis) is steady, but in small demand. London, £24 per ton, at docks.

SODIUM PRUSSIAN is dull, with British make at about 4d. per lb.

SODIUM SULPHIDE is neglected. Dealers offer 60 to 62 per cent. solid at £13 7s. 6d., and broken at £14 per ton, in drums.

SULPHUR is steady and in fair inquiry. Crude is £5 7s. 6d. to £5 10s. per ton delivered Manchester. The filling of orders now depends on American material in the absence of further arrivals from Italy for some time to come. Refined is £9 12s. 6d. to £9 15s. for Sicilian flowers, and £7 15s. for roll, delivered London warehouse.

COAL TAR PRODUCTS, ETC.—Business generally leaves much to be desired here, but prices continue fairly steady and show no material change this week. ANILINE OIL remains rather quiet, with British makers quoting at 7½d. to 7½d. per lb., naked at works. ANILINE SALT is dull; British makers quote at about 7½d. per lb., naked at works. BETANAPHTHOL is very flat at about 1s. per lb., d/d. TOLUOL continues fairly active, with prices fully maintained: pure, 1s. 10d. to 1s. 10½d.; 90's, 1s. 6½d. per gallon. XYLOL is neglected: pure, 3s. 3d.; commercial, 2s. 3d. per gallon. CREOSOTE OIL is showing but little activity; prices are unchanged: ex works, 6d. to 6½d. per gallon; f.o.b., 6½d. to 6½d. per gallon, in bulk packing. CARBOLIC ACID crystals keep steady as quoted, but business in quantities is poor: f.o.b. in bulk quantities is 4½d. to 4½d. per lb. for 39° to 40° C. crystals, according to quantity. CRESYLIC ACID is steady and in fair demand as quoted at 1s. 8½d. to 1s. 10d. per gallon, for 97 to 99 per cent. NAPHTHALENE is very flat and nominal as quoted at £13 to £14 per ton for flakes and crystals. Pure METHYL ALCOHOL is offered by dealers at £50 per ton in drums to arrive, but there is no demand. HEXAMETHYLENE is steadier this week at 2s. 8d. to 2s. 9d. per gallon. PYRIDINE has quietened down in demand, and prices are now in the region of 19s. per gallon. PITCH.—This market remains very dull with the quotation at 40s. per ton, f.o.b. East Coast. Only a little inquiry for next season.

Fixed Oils, etc.

A FAIRLY steady tone governs most items in this section, although business has not been quite so brisk. American turpentine and linseed oil (raw, naked) are down on the week. ACID OILS are steady with prices rather higher: coconut and palm kernel, 41s. 3d.; groundnut, 38s. 9d.; soya, 33s., all spot. CASTOR is nominal on an idle market: pharmaceutical 65s.; first pressings, 58s.; second pressings, 56s., in barrels in not less than one-ton lots. COCONUT.—Business continues on a firm market: deodorised, spot, 55s.; Ceylon, 47s. c.i.f.; Cochin, 60s. c.i.f. COTTON is again quiet and prices are not steady: deodorised, 52s.; common edible, 50s.; soapmaking, 48s.; crude, 43s. 6d., all spot. GROUNDNUT is quieter but steady: deodorised, spot, 57s.; crude Oriental, 53s. c.i.f. PALM KERNEL continues steady and quiet: deodorised, 50s.; crude, 44s. 6d., all spot. PALM is rather lower for all grades: Lagos, 39s. 9d.; softs, 39s.; mediums, 39s. 9d.; hards, 40s. 6d.; bleached, 42s., all spot.

RAPE is firm at unchanged prices: refined, 56s. 6d.; crude, 55s. 6d., all spot. SOYA is very quiet: deodorised, 49s.; crude, 45s. 3d., all spot. LINSEED (raw, naked) is quiet and easier forward: on spot, 43s. 6d.; June, 42s. 3d.; July-August, 42s. 4½d.; September-December, 42s. 6d.; boiled oil, spot, 47s.; Hull, on spot, 42s. 3d.; June-August, 42s. 4½d.; September-December, 42s. 4½d. TURPENTINE.—There was a renewed advance late last week in response to better American reports, while the home trade demand improved, but prices eased again under the influence of a renewed set-back in the Savannah quotations to about 94 cents. At the lower level the undertone has been quite good, this being in some degree due to the stronger statistical position. Deliveries last week were larger, amounting to 1,986 barrels, making a total since January 1 of 42,307 barrels, against 44,603 barrels a year previous. A good deal went into stock at this end, but the floats having been at the same time much reduced, there has been a considerable shrinkage in the London visible supply to 20,792 barrels, of which 19,036 barrels represent the actual stock, compared with only 6,337 barrels a year ago. On spot, 70s. 3d.; July-December, 70s. 6d. WOOD.—Hankow in barrels on spot is dearer at 70s., shipment prices being nominal.

LUBRICATING, MINERAL, BURNING OILS, ETC.—LUBRICATING OILS are now very steady on spot, with shipment conditions firm. Other items show little change on the week, with business rather slow. BENZOL continues bright on a firm market: crude 65s., 1s. 3d.; standard motor, 1s. 8d.; and pure, about 1s. 11d. per gallon, ex works, in tank wagons. FUEL OIL is steady, but quiet: 950 gravity, £4 2s. 6d.; 890 gravity, £4 17s. 6d. per ton, ex tank. PARAFFIN WAX and SCALE.—Wax is very steady at 3d. to 5d. per lb., according to melting point, in bags. Scale is firm and dearer for shipment at 26s. 6d. to 27s. 3d. per cwt., c.i.f. U.K. PORT. PARAFFIN OILS are unchanged: American standard white, 1s.; water white, 1s. 1d. per gallon, barrels free; Russian prime white kerosene, 6½d. to 7d., ex tank; 7½d. buyers' barrels filled free, and 10½d. per gallon, barrels free, ex wharf, London. PETROLEUM JELLIES are quiet and easy as quoted: white to snow white, £56 to £60; amber and yellow, £23 to £26; red vet, £20; dark stiff green, £17 10s. per ton, drums and barrels free. WHITE OILS are quiet and rather unsteady: Special No. 1, £29; No. 1, £27; No. 2, £25; No. 3 half-white, £24; No. 4 half-white, £18 per ton, drums and barrels free, ex wharf, London. SOLVENT NAPHTHAS are steady, with business sustained: 90 to 160, 1s. 3½d. to 1s. 4d. per gallon; heavy solvent naphtha, 40 to 190, dull, 1s. per gallon. LUBRICATING OILS.—Shipment conditions are cabled as again slightly firmer, and the spot position is very steady, but there has been no actual advance so far here: on spot, pales, £11 10s. to £23 10s.; reds, £13 10s. to £23 10s.; dark cylinders, £13 10s. to £23; altered cylinders, £21 5s. to £35 per ton, less 2½ per cent., ex wharf, London.

Spanish Olive Oil

A SPANISH royal decree, which came into force on June 1, regulates the production, exportation and sale of olive oil in that country. Registered brands of olive oil exported in glass bottles or in tins are exempt from all export dues, including the navigation tax, and the same applies to olive oil exported in barrels, etc., provided the latter bear the registered national brand. In the absence of this indication of its origin, an export tax may be levied on olive oil by the Government, if it deems it advisable to take this step in the interests of producers, traders and consumers. Olive oil for culinary or industrial uses in Spain must be packed in containers bearing the brand, grade, name of manufacturer and place of production. To protect the national oil industry, the importation of oil seeds is now limited to 40,000 tons per annum, and the amount which may be imported during the period, June to December, 1925, has been fixed at 23,400 tons. This maximum amount will be distributed among the manufacturers *pro rata*, on the basis of their individual output during the past year. Oil seeds may be consigned only to registered oil mills, and no new factory for the production of oil from seeds may be erected in Spain unless authorised by the Government. The Council of National Economy is to investigate to what extent the national oil industry requires protection by a modification in the rates of duty on oil seeds and oils at the next revision of the Customs tariff.

Magnesium Chloride Prices

AN agreement has been reached between the German Magnesium Chloride Association and the potash industry jointly fixing the price for fused magnesium chloride at £4 10s. per metric ton, f.o.b. Hamburg, thus terminating the price war waged since the end of March by both groups

(C. & D., April 4, p. 518). The price for magnesium chloride cryst. has been advanced to £5 10s. Since dealers are offering the fused salt at prices ranging between £2 15s. and £3 10s., the new price is not likely to apply for some time.

Indian Magnesium Chloride

THE report of the Indian Tariff Board regarding the granting of protection to the magnesium chloride industry holds that protection would not be justified; first, because it has not been proved that the industry would eventually be able to stand on its own legs; and secondly, because nothing less than a 70 per cent. duty would give the industry a fair chance of protection. Such a duty, it says, would involve the country in heavy sacrifice without any compensating advantage, the industry not being of national importance. Further, if supplies should happen at any time to be cut off, owing to an outbreak of war, the industry could be restarted at short notice.

Peruvian Coca

THE exports of coca leaves from Peru during the four years 1913, 1920, 1921 and 1922, expressed in kilos, were respectively 335,583, 453,067, 87,849 and 124,257. The ancient coca plantations (says a correspondent of the "Times" Trade Supplement) are situated high on the sides of the sierras, while down in the valleys are plantations of bananas, sugarcane, coffee, cotton, cocoa, oranges, lemons, manioc, etc. The long coca terraces, or "humachas," rise one above the other on the mountain slope, each line of terrace being held firm by a support of earth and stone. An important function of such supports is to intercept the rain and prevent it from rushing away down to the valley below. The shrubs are planted from 6in. to 8in. apart from each other, the twigs of each two plants, however, touching and intermingling. The normal height of a matured bush is from 35in. to 40in. Anything beyond this is regarded as exceptional. These bushes grow from seedlings which are also produced in the "humachas." Not till the fourth or fifth year is the shrub in full bloom, although yields may be obtained in the third year. There are three harvests yearly, and occasionally a fourth, and if the plants are properly looked after, the life of a plantation should be from 50 to 60 years. Once the leaves are matured they are plucked by hand, and carefully dried, first in a closed drying chamber, where, on a floor of beaten earth, the leaves are spread. They are afterwards placed upon an open drying-ground, following which they are stored in dry buildings and packed into bales. This question of drying is vital, for if the leaves become moist from any cause their value is lost. It is a very profitable industry, as the disposal of the coca harvest is absolutely assured, the plant being in universal demand throughout Peru and Bolivia.

Chinese Tea Seed Oil

THE chief tea oil producing regions in China are Hunan, Hupeh, Kiangsi, Kwangtung, Kwangsi, and Fukien. Hankow is the distributing centre of the first three provinces and Wuchow, Kwangsi province, of the others. Of these provinces Hunan produces the most. Places such as Liuyang, Pingkiang, Leiyang, and Hengshan on the Siang River, Anhwa, Sinhwa, and Paoking on the Tze River, and Taoyuan on the Yuan River are all well-known tea oil producing districts in Hunan. The amount of tea oil shipped to Hankow for distribution from Hupeh and Hunan amounts to 30,000 piculs annually. Last year 7,000 piculs were shipped through that city between the months of January and July. The following are the amounts of tea oil exported from Hankow in 1921, 1922 and 1923:—

1921	1922	1923
8,134 piculs	13,210 piculs	14,656 piculs

Most of the oil is shipped to Japan, Hong Kong, Great Britain, and the United States. In 1922 the amounts exported to these countries were: Japan, 6,559 piculs; Hong Kong, 7,483 piculs; Great Britain, 1,023 piculs; and the United States, 778 piculs. In Japan and Western countries the oil after being purified, is generally used in toilet waters. In China, tea oil is used in dietary articles, in lamps, and for toilet purposes. The refuse after the oil is pressed (tea cake) is used in China for washing and disinfecting purposes, as fertiliser or fuel. The buyer usually maintains an agency at the source of production and the oil is bought through the local warehouse keepers, who receive a commission from both buyer and seller. The principal tea oil dealers in Hankow are:—*Foreign*: French, Olivier & Co. and Racine & Co. *British*: Jardine Matheson & Co., Liddell Brothers & Co., and Mackenzie & Co. *Chinese*: Feng Chang, Hsiang Yuan, Tai Shun, Tung Ta, Yui Chang, and Tien Shun.



Letters for this section should be written on one side of the paper only. Correspondents may adopt an assumed name for purposes of publication, but must in all cases furnish their real name and address to the Editor.

Insurance Prescribing Problems

SIR,—Within a few days of my previous letter on the risk of irregularities in the issue of panel prescriptions, I have found in my daily paper a report of a case in which a doctor was alleged to have allowed his dispenser to fill in Insurance certificates. If such a thing can occur in the case of certificates, it can and probably does in the case of scripts, in which we as pharmacists are more interested. The report leads one to think seriously that for one incident which is discovered there must be many which are not. For that reason alone there should be some system of checking the genuineness of Insurance prescriptions.—Yours faithfully,

REGULATE (2/6).

Notifying Medical News

SIR,—From time to time one sees in the *C. & D.* notices of withdrawal of authorisation from doctors under the Dangerous Drugs Acts, notices of removal of doctors from the panel and similar cases; but it is quite possible that one misses some of these notices. In the case of panel practitioners it should be compulsory for the local Committee to advise panel chemists instead of leaving them to find out. Similarly, in cases of the sale of a practice or a change in partnership, the chemist should be notified, so that he is prepared when a script comes in with a fresh signature. In some cases, such as that of a prescription containing "dangerous" drugs, it might be very serious for the chemist if he made an unwitting slip.—Faithfully yours,

NOTIFY (13/6).

Panel Doctors' Dispensing

SIR,—I have no wish to labour the point any more than to evade it, but the fact remains that "*Xrayser II*" is regarding the situation (*C. & D.*, June 13, p. 855) from a different angle from mine. Although only the unfortunate chemist can be prosecuted for discrepancies in dispensing, actually the public is served by two classes of dispensers, the pharmacy and the dispensary, and the result of error or the use of cheap or adulterated drugs is the same in both cases. As for being a commercial transaction, what is more commercial than the supply of 6-oz. sixth-part mixtures at 3s. 6d. each by the doctor's dispenser or clerk or cook? And what is more commercial than the supply of enemata, bandages, trusses, spectacles, etc., which is done at many dispensaries to-day? Your correspondent "*Bitter Aloes*" (*C. & D.*, June 13, p. 871) describes the situation more tersely than I can do; and the glaring anomalies of the various Acts for the protection of the public, the said Acts only applying to a portion of the people undertaking the work, are a standing monument to legislation by expedient. Take the case of the B.P., for example; it is the retail chemist's standard, and in every law case it is rammed down his throat *ad nauseam*; it is compiled and published by doctors, and the Pharmaceutical Society has no say in the matter, and yet these same doctors can and do use aqueous tinctures, etc., and the Insurance Committees can do away with the B.P. at will—concentrated waters, tap water, and so on. Imagine an insured person presenting an insurance script to be dispensed and his uninsured wife presenting the same prescription on a private form; if the chemist dispensed *Thon* bath according to N.H.I. rules he could be prosecuted for one and not for the other.

Yours faithfully,

INSPECTION FOR ALL (15/6).

Legal Queries

B. H. & Co. (8/6).—"Blood Purifier" is a title which involves liability to medicine-stamp duty. The Spa Powder, providing the composition of the article comes within the terms of the aerated waters section (repealed in 1833), is not liable to medicine-stamp duty.

I. D. (2/6).—The label you submit for head and nerve powder is not by itself liable to medicine-stamp duty, but if the same powder is sold elsewhere as "*Mrs. —'s Headache Powder*" we think that the Board of Customs and Excise might have grounds for regarding the powders as the same.

B. B. (15/6).—Qualified chemists in business on their own account are the only persons who may give verbal orders to commercial travellers for "dangerous" drugs. Orders for Part I poisons and "dangerous" drugs from medical men, dentists and veterinary surgeons must be on signed orders. In the case of institutional chemists a signed order is necessary only for "dangerous" drugs and poisons covered by the Arsenic Act.

B. P. (10/6).—The question as to what address should be placed on a poison label in case of persons or companies carrying on business at several addresses has not been settled in law. In a case heard in 1910 as to the use of a trade name on a label the judges expressed the opinion that, bearing in mind that the object was to trace readily the seller of a poison, the address should be that where the poison was sold.

H. W. B. (8/6).—There is nothing to prevent you intimating to the Insurance Committee that you consider interest should be paid on overdue accounts, but we do not think the Committee have power to pay it. You should get the Pharmaceutical Committee to act in the matter, as individual effort in this case is not likely to effect an improvement. The Pharmaceutical Committee have considerable power in the matter.

Cortex (10/6) is the landlord of premises consisting of a shop with a room at the rear that can be entered only through the shop. The tenant resides in the room, and his three years' agreement has just expired. "*Cortex*" has given him notice to quit. Can the tenant be compelled to give up possession? "*Cortex*" wants to let the premises to another trader. [The tenant cannot be evicted so long as he pays his rent and observes the conditions of his tenancy.]

Retrospect of Fifty Years Ago

Reprinted from

"The Chemist and Druggist," June 15, 1875.

Unprofitable Note-taking

Mr. Joseph Ince writes: Order is a mental quality—the power of effecting an equal distribution of efforts and ideas; system is the same power applied to mechanical arrangement. The two should be made one, and both may be infinitely strengthened by cultivation. Lastly, there is the old English term called labour, without which all other virtues, major and minor, are ineffectual. This labour, with its intellectual order and its mechanical system, is weakened by certain well-intentioned practices that have been adopted in good faith, chief of which, as far as my judgment goes, is the time wasted in taking notes. I would venture to appeal against this unwise habit, which is still existent. In the cumbrous old days of scholarship, when years were spent on Latin verse and protracted processes of learning were accepted as proof of diligence, the learner gazed with pride on his folio manuscript of annotations; but in this age of admirable text-books their use has been superseded. Note-taking, except the merest headings, is to be deplored as representing the maximum of trouble with the minimum of result. But if there be a gain in seizing *currente calamo* a lecturer's expressions, let me strongly urge the use of shorthand, and say from personal knowledge that its difficulties have been enormously overrated. Three months with one hour's daily application will smooth its opening embarrassments; and three months more at the same rate will give facility in practice. Pitman's system is readily acquired, and its characters are not difficult to decipher.



[Commenced C. & D., July 5, 1924]

Chloroform, Commerce of.—The following figures show the exports and imports of chloroform from and into the United Kingdom during the years 1920 to 1923:—

Exports				
	1920	1921	1922	1923
	Lb.	Lb.	Lb.	Lb.
France	35,395	77	52	27
Other foreign countries ..	43,807	13,798	20,481	12,850
Total to foreign countries	79,202	13,875	20,533	12,877
Value	£ 16,780	4,251	5,104	3,603
British India	20,325	15,817	22,913	22,929
Australia	14,348	29,099	32,967	34,859
Canada	16,465	10,718	7,781	10,644
Other British Possessions	22,890	18,529	26,955	25,331
Total to British Possessions	74,028	74,163	90,616	93,763
Value	£ 20,518	18,840	20,893	20,692
Total	153,230	88,038	111,149	106,640
Value	£ 37,298	23,091	25,997	24,295
Imports				
	1920	1921	1922	1923
	Lb.	Lb.	Lb.	Lb.
United States	2,844	1,181	678	670
Other foreign countries ..	—	106	21	9
Total from foreign countries	2,844	1,287	699	679
Value	£ 6,103	3,239	253	1,061
Total from British Possessions	—	1	—	—
Value	—	—	—	—
Total	2,844	1,288	699	679
Value	£ 6,103	3,239	253	1,061

The British import duty is 4s. 4d. per lb.

In 1924, France imported 52,000 kilos of chloroform, of which 13,000 kilos were delivered to the home market. Exports of chloroform totalled 24,800 kilos, of which 9,000 kilos were of French manufacture. German exports of chloral hydrate and chloroform in 1924 amounted to 192,700 kilos, and imports to 600 kilos.

Chlorophyll of commerce is a variable product made by extraction of green vegetable tissues (leaves) with alcohol or acetone after a preliminary extraction with ether. Natural or "amorphous" chlorophyll is a compound of phytol, $C_{26}H_{52}OH$, and methyl alcohol, with chlorophyllin (a tricarboxylic acid, $C_{31}H_{26}N_4Mg(COOH)_3$; but during alcoholic extraction "crystalline" chlorophyll (ethyl chlorophyllide and phytol) and other degradation products are formed. Commercial chlorophyll is in the form of a paste or soft extract, and is usually sold as oil-soluble chlorophyll. The value of the product is best judged by its tinctorial properties and freedom from aniline dyes and from copper salts, which may be added to prevent decomposition. Chlorophyll is used where a natural green colouring material is required in cosmetics, hair oils, etc.

Chocolate is prepared by mixing cocoa powder (cocoa beans defatted by pressure) with sugar and cocoa butter, the proportions being varied according to requirements, vanillin being added for flavouring purposes. The production of chocolate requires special plant (for cooling) and machinery for mixing, prolonged grinding under heavy rollers (melangeurs) being a feature to impart smoothness to palate. Cheap chocolate contains farina

(starch), and in its manufacture ground cocoa husk is often substituted for defatted cocoa bean.

Choke damp is the name given to an atmosphere containing a fatal excess of carbon dioxide (over 20 per cent. by volume), which may accumulate in coal mines or at the bottom of confined spaces, such as wells or sewers. Dimming or extinction of a burning candle indicates the presence of a dangerous proportion of carbon dioxide in the atmosphere.

Cholesterin, or cholesterol, $C_{27}H_{46}OH$, is an unsaturated monatomic alcohol of unknown constitution. It crystallises from alcohol with one molecule of water of crystallisation, and after drying *in vacuo* forms colourless transparent plates with greasy touch, melting at $148.5^\circ C$. Cholesterol is known to be a complex terpene related to retene and to cholic acid, with only one double bond (as vinyl group $CH:CH_2$) at the end. Cholesterin is undoubtedly of considerable physiological importance, being found in small amounts in nearly all animal tissues and fluids, especially the brain and nervous system. Cholesterol, lecithin and fatty acids are classed as lipoids, the influence of which on the permeability of cell membranes is all-important. The ratio of cholesterol to fatty acids would appear to influence the absorption and retention of water by living cells; thus, starved cells retain cholesterol, which increases the absorption of water. Wool fat, the richest source of cholesterol, contains about 70 per cent. of cholesterol and 30 per cent. of fatty acids, and is used in emollient preparations owing to its ability to absorb water. The colour reaction given by cholesterol with sulphuric acid is the basis of several specific tests using definite concentrations or solutions in special solvents such as acetic anhydride or chloroform. Cholesterol accompanies and would appear to be closely allied to fat-soluble vitamin A.

Christian Name, Change of.—English law has always recognised the right of any person to change his surname at pleasure; but, apparently, in earlier times the first or Christian name given to a person at baptism could be changed only at confirmation. Nowadays, however, a person may, at any time, assume another name in addition to or in substitution for his baptismal name, which, for all practical purposes, becomes his Christian name (see "Change of Name").

Christmas Boxes.—It is a common practice for traders to make gifts to the servants and agents of their customers at Christmas time. It is a question of fact, in every case, whether, in the circumstances, the Christmas box is illegal under the Prevention of Corruption Act, 1906, upon the ground that it is a bribe (see Bribery). The most important factors to be considered when determining this question are these: Is the present a reward for past favours or an inducement to show favours in the future, and is it given secretly? If the answer to both these questions is in the affirmative, the Christmas box is, undoubtedly, illegal, and both giver and recipient are liable to be prosecuted. Generally speaking, the giving of Christmas boxes is undesirable upon the grounds both of morality and of expediency. But in those cases where a trader is anxious to give his customers' servants gifts at Christmas time, purely as an expression of reasonable goodwill, he should safeguard himself by first obtaining the approval of their employers.

Christmas Trade.—Business at Christmas time is a concentration upon articles suitable for gifts. The development of the chemist's business in recent years has made it possible to broaden the basis; whereas once it was largely perfumery, now it includes a great range of toilet lines covering almost every possible desire. In order to get the best results, careful thought is necessary to impress buyers. Over-stocking is a great danger, yet an adequate display cannot be made without unusual outlay. Artistic and tasteful display are greater assets in producing business at Christmas time than any other. The period covered is about three weeks, and brightness, whether due to lighting or colours, is a great factor. Display at this time differs from most other periods. It should be varied so as to appeal to every kind of

The C.&D. Commercial Compendium

desire in contradistinction to a striking display of one line. There are bound to be many lines left over after Christmas, and for this it is not a bad plan to try and stimulate their clearance by reduced prices, especially in modern perfumes, which do not always improve by age.

Chrome Workers' Eczema.—The effects of chrome on the skin are dealt with in an Official Cautionary Notice (Form 398, 1924, H.M. Stationery Office, Kingsway, London, W.C.2; 1d. *plus* postage), which must be posted up in factories where chromates are used (*see* Chrome Workers' Protection). Chrome "holes" or ulcers form when the skin has been broken (generally over the knuckle, at the root of the nail, on the instep or ankle) and chrome solution sinks in. When a break in the skin is properly protected, work can be continued, but unless properly protected, an ulcer is sure to form, which will burrow. Healing then takes several weeks and involves absence from work. The following points should be observed: (1) Inspection of fingers and hands; (2) stop work immediately the skin is broken, in order to (3) wash the part with running water, and (4) cover it with a dressing under waterproof plaster. These steps are necessary even if rubber gloves are provided. In regard to chrome eczema, the following ointments are recommended if the skin is sensitive: (1) Soft paraffin B.P. 3 parts, lanolin 1 part, to which, when melted and mixed, is added five drops of 90 per cent. pure carbolic acid to every four ounces of the mixture. Rub the ointment in well, and then take a clean cloth and wipe dry. (2) Mineral lard 3 lb., paraffin wax 6 oz., carbolic acid 1½ oz. Mineral lard is a synonym—not a very desirable one—for soft paraffin.

Chrome Workers' Protection.—By Orders made in 1918 under the Police, Factories, etc. (Miscellaneous Provisions) Act, 1916 (S.R. & O. 1918, No. 368 and No. 369, respectively), the occupier of factories or parts of factories in which bichromate of potassium or sodium is used in tanning by the "two-bath" process, or in which these chemicals are used in dyeing other than job-dyeing, is required to provide suitable protective clothing for all persons coming into contact with chrome solutions or crystals. A first-aid box or cupboard marked with a white cross on a red ground must also be provided. The box must contain, besides any other medical appliances, a supply of: (i) Collodion and brushes; (ii) impermeable waterproof plaster; (iii) ointment, lint, bandages and scissors; (iv) a 2 per cent. alcoholic solution of iodine (*see* First-aid). Notices stating the name of the person in charge of the box must be fixed in every room and the Official Cautionary Notice (*see* Chrome Workers' Eczema) as to the effects of chrome on the skin must be kept posted up in the works. The fingers of all persons coming in contact with chrome solutions must be inspected twice a week. Accommodation for drying wet clothes and a suitable messroom must be provided.

Chromic Acid or chromic anhydride (CrO_3) (m.p. 192°C .) is a powerful oxidising agent, and must be kept from contact with oxidisable substances, including glycerin and alcohol. The British Pharmacopœia requires chromic acid to contain 90 per cent. of chromic anhydride. Chromic acid is used in medicine as deodorant disinfectant and for destroying warty growths. The strengths used (in distilled water) are:—For gargle, 1 in 500; for painting ulcerated gums or throat, 1 in 40; and for warts, 1 in 4.

Chromite.—The largest source of the world's chromite until recently has been New Caledonia, but in the past three years Rhodesia has taken the leading place. India is also an important producer, and the New Caledonian output has now fallen below India. These three countries together account for over 90 per cent. of the world supply. Chromite mining during 1923, according to Edward Sampon, prospered in all the pre-war fields except those in Turkey. Rhodesia, which produced 84,799 metric tons in 1922, met increased competition from India; and it appears that, though Rhodesia is

sending more chromite to the United States, she is sending less to Europe than formerly. The total production in Rhodesia in 1923 fell a little short of that in 1922.

THE PRINCIPAL SUPPLIERS OF CHROME ORE *
(In metric tons)

	1919	1920	1921	1922	1923
Brazil	4,877	3,506	—	—	—
Bosnia	500	—	—	—	—
Canada	8,678	9,996	2,538	696	2,654
Cuba	14,693	721	610	1	10,587
Greece	4,164	12,492	5,919	9,927	10,600
Guatemala ..	1,686	1,122	401	—	—
India	37,024	27,232	35,322	23,144	—
Japan	6,012	3,967	3,368	3,756	—
New Caledonia†	23,548	91,536	29,458	10,718	23,226
Queensland ..	—	161	NIL	NIL	NIL
Rhodesia	32,007	54,674	45,533	84,799	87,702
Russia	—	2,360	2,220	11,500	—
Turkey	3,500	25,000	10,000	2,540	—
United States ..	5,161	2,542	256	361	231

* From the official reports of the respective countries.

† Exports, except 1914 and 1915.

‡ Estimated in part.

Chromium and Salts.—Chromium (atomic weight 52 and sp. gr. 6.92) is a metal closely allied to both iron and manganese in its properties of salt formation. Chromium is found naturally as chrome iron stone (Cr_2O_3 , FeO), which, by smelting in blast furnace, yields ferrochrome (containing 10 to 40 per cent. of chromium). The metal itself (which melts at about $2,000^\circ\text{C}$.) is used in making heat-resisting alloys (such as nichrome). Chromium salts, pigments, or sesqui oxides (Cr_2O_3) find uses as a green pigment Guignet's green is a hydrated form, and is as chrome green or ultramarine green used for imparting a green colour to colouring glass and porcelain. The chrome alums are the most important chromium salts, excepting potassium bichromate (q.v.), which is the ultimate source of all pure chromium preparations. Potassium chrome alum ($\text{Cr}_2(80\text{A})_3$, $\text{K}_2 80\text{A}$, $24 \text{H}_2\text{O}$) is used as mordant in dyeing and for tanning leather, and for hardening photographic gelatin plates. Insoluble chromates are used as pigments, chrome yellow being lead chromate, while barium chromate is known as yellow ultramarine or lemon yellow. Chrome red is basic lead chromate. The medicinal use of chromium is confined to chromic acid (q.v.).

Cider Sale.—No licence is required for the sale of cider in quantities not less than four and a half gallons or not less than two dozen reputed quart bottles. Sales in less quantities than these are retail sales, and require both a justices' and an Excise licence. A retailer's cider "on" Excise licence authorises the holder to sell cider by retail for consumption either on or off the premises. The annual licence duty varies according to the annual value of the premises. For a house under £30 value the duty is £2 5s.; for £30 and under £50 is £3; for £50 and under £100 is £4 10s.; and over £100 is £6. A beer retailer "on" or a spirit retailer "on" (publican) can sell cider without further licence. An Excise licence to sell cider by retail for consumption "off" only costs £2 annually, and need not be taken out by a person holding a beer retailer's "off" licence. A licence to sell cider entitles the holder to sell perry also. The justices' licence must be obtained before the Excise licence to retail cider is obtainable. For this an application has to be made at the annual licensing sessions for the district, which are held each year in the first fortnight of February. Notices of the intention to apply have to be given beforehand to (1) one of the overseers of the poor of the parish; (2) the superintendent of police for the district; and (3) the clerk to the licensing justices. The notice is also required to be affixed on the premises to be licensed and on the door of the church or chapel of the parish. It has also to be advertised in some local paper, as the licensing justices may order. The justices' licence, when granted, requires to be confirmed by the confirming authority—that is, Quarter Sessions.

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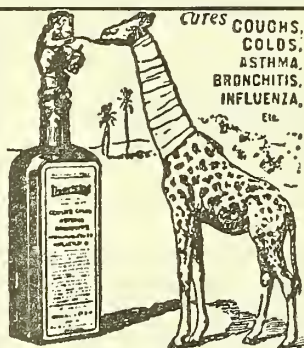
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THE CHEMIST AND DRUGGIST SUPPLEMENT

42 CANNON ST.
LONDON E.C. 4

JUNE 20, 1925.

This Supplement is inserted in every copy of The Chemist & Druggist.

NEXT WEEK IS THE ANNUAL SPECIAL ISSUE

therefore 'THE CHEMIST AND DRUGGIST' SUPPLEMENT will be put to press a day earlier than usual. Accordingly any advertisements intended for the Supplement of JUNE 27 should reach this Office not later than

10 a.m. on WEDNESDAY, JUNE 24

ADVERTISEMENTS RECEIVED LATER will be INSERTED in the ISSUE of JULY 4

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3.—SOUTH LONDON.—Cash Retail Business, working class, with N.H.I. Dispensing; returns approach £1,400, with gross profit about £600; large shop, single-fronted; good working stock; 12 years' lease; moderate rent; price, about £750.

4.—VICTORIA.—High-class Dispensing Business, very old-established; returns, £3,250; net profit, £700; single-fronted shop, well fitted and stocked; living accommodation; the premises are held on lease; price, £2,500.

5.—KENT (Suburban).—Cash Drug Store, with opening for H.I. Dispensing; returns, about £25 weekly; single-fronted shop; good working stock; 7-roomed house, garden; very low rent; new lease; price, £800, or valuation terms entertained; part payment.

6.—CITY OF LONDON.—Cash Pharmacy, situate in busy main thoroughfare, near railway station; very old-established; net profit, £1,000 per annum; well-fitted shop; excellent stock; other details on application.

7.—LONDON.—Old-established Wholesale Business, dealing with Packed Goods and Proprietaries; returns, £13,000; net profit, £1,000; books audited by Chartered Accountants; valuation terms or lump sum offer entertained.

8.—SOUTH COAST.—General Retail and Photographic Business; established 18 years; returns for 1924 were £2,518, with

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9.—LANCASHIRE.—Working-class Business, situate in large town; established many years; returns, £1,450; net profit, £375; splendidly fitted shop, fully stocked; small house; rent, £52; price to be arranged.

10.—EASTERN COUNTIES.—Mixed Retail Business in small market town; returns about £2,650, with scope for increase; net profit, £500; large, well-fitted shop; excellent house, garden and garage; terms, goodwill £500, stock and fixtures at valuation; freehold also for disposal.

11.—HOME COUNTY.—Cash Retail Business, with Kodak and Rexall agencies; returns for first 5 months of current year, £1,172 (at rate of £2,700 per annum), under management; double-fronted shop; stock and fixtures estimated by Vendor at £1,090; 18 years' lease to run; moderate rent; offers invited; part-payment entertained.

12.—HARROGATE (Few Miles From).—General Retail and Agricultural Business; returns, £1,000; the business has been neglected and offers scope for increase; single-fronted shop, well stocked; held on lease at low rental; price for quick sale, £400.

13.—SUSSEX COAST.—Cash Drug Stores, very much neglected; present returns about £12 weekly; single-fronted shop, new front; stock and fixtures estimated by Vendor at £400 (all new); new lease will be granted, or property may be purchased; price to be arranged.

14.—NORTHANTS.—Middle-class Cash Retail, with Optical; situate in busy market town near G.P.O.; present hands 35 years; returns, last year, £2,500; average net profit, £650; double-fronted shop, fitted in mahogany and heavily stocked; six-roomed house; new lease will be granted; price, £1,500.

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4.—SOMERSET.—Old-established Business, in country town; returns, £22 p.w.; 7 years' lease, at £40 p.a.; lock-up double-fronted shop; price £1,200, or offer. (144)

5.—S. DEVON.—Good-class ready-money Business in important town; returns, £30 p.w.; Kodak, N.H.I., etc.; double-fronted shop, with 8-roomed house; price, including freehold property, £2,600. (134)

6.—SOUTH DEVON.—Very old-established Business in residential district of busy town; returns, £34 p.w.; rent, £90; lease to be arranged; double-fronted, well-fitted shop and house with 7 rooms; side entrance, store, etc.; price £1,450. (154)

7.—ESSEX.—Popular seaside resort; prominent corner shop, with 7-roomed house, in main road; 14 years' lease, at £200 p.a.; returns, £1,800 p.a.; price £2,000, or near offer; terms, part down and balance by arrangement. (156)

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9.—LONDON, W.1.—Good Dispensing Business in populous suburb; 8 years' lease at £150 inclusive per annum; price for goodwill, fixtures and fittings £400, or near offer; stock at valuation, or, if preferred, stock can be removed. (114)

10.—YORKS.—Cash Business, in main road, in important industrial town; 5 years' lease will be granted at £90 to £120 per annum; returns, £30 per week; Kodak Agency; dwelling accommodation; price, goodwill, £450; stock, fixtures at valuation.

11.—CHESHIRE (Small Market Town).—Retail Chemist and Druggists; established 26 years; 9 years' lease at £28 per annum; returns, £25 per week; large lock-up shop with ample storage accommodation; every convenience. Fuller particulars on application.

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14.—LONDON, S.W.—Family Retail High-class Dispensing Business; well fitted and good stock carried; established 30 years; premises consist of lock-up shop, held on lease 14 years at £80 per annum; last year's returns, £2,500; scope for increase. Full particulars on application.

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4.—EASTERN COUNTRY (Death Vacancy).—Unopposed Mixed Country Retail; present returns, £20 weekly; plenty of scope; large house and garden; price, including freehold, £1,400; £400 can remain; recommended.

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WANTED, small Chemist's Business or Drug Stores, with good opening for N.H.I.; within about 30 miles of London; living accommodation essential; please give full particulars as to rent, rates, turnover, profits, etc., to be treated in strict confidence. "Pharmacist," 233 Uxbridge Road, Shepherd's Bush, W.12.

WANTED, at once, good Family Business, with Photography Agency or scope, in London or good suburb, takings about £40 weekly; on long lease; with or without living accommodation; price, up to £1,500; must bear strict investigation and prove takings; call or write. Edwards & Flanders, 277 Bank Chambers, 329 High Holborn.

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A VERY unusual and perfectly genuine opportunity occurs through ill-health of principal for lady or gentleman with first-class trade connections to secure financial interest (with services preferred), in a sales or kindred capacity, in a newly-assembled, original, high-grade Perfumery enterprise of great virtue in summer months and heat-wave in particular; most attractive colour scheme; advertiser has Press, and Social influence of considerable propaganda value; Private Company may be formed to embrace also an old-established Embrocation Proprietary of great potentiality; stocks can be inspected London warehouse; All references offered and expected; would entertain sale outright or working arrangement with house of repute and ability to handle these lines with enthusiasm; interviews London. 116/26, Office of this Paper.

PREMISES FOR SALE.

LANCASHIRE.—Business and Premises for Sale at Earlestown, between Liverpool and Manchester; double-fronted corner shop; well-fitted mahogany; returns £1,500, excluding N.H.I.; average monthly last year 540, increasing this year; established by owner 28 years ago; now retiring; also double-fronted Shop next door; both premises with living rooms behind and 6-roomed dwelling-house next to this; price for all £5,000. Knowles, Chemist, Earlestown, Lancs.

EXCELLENT position for Chemist; nearest two miles, and one mile each way; newly-built premises. Apply Steer, Eastern Esplanade, Thorpe Bay.

FOR SALE.

GLASS Front Counter, £10; 7½ ft. long; plain top. "H. B.," 843 Old Kent Road, London, S.E.

AGENCIES.

6s. for 50 words or less; 6d. for every additional 10 words or less, prepaid.

The ADVERTISER may if preferred have replies addressed to this Office, and forwarded on payment of an additional charge of 1/-.

SOUTH AFRICA.

LENNON, LIMITED, who have been established 75 years in South Africa as Chemists, having their own Branches in all the most important centres, place at the disposal of those who desire energetic representation their unrivalled facilities for the distribution of MEDICINES, SUNDRIES, TOILET GOODS, PHOTOGRAPHIC AND OPTICAL MATERIAL, etc., etc.

Having efficiently staffed Laboratories, fitted with modern plant and with ample accommodation for expansion, propositions for local manufacture, with a view to avoiding the heavy duties on imported completely manufactured preparations, would be gladly considered.

LONDON OFFICE—LENNON, LIMITED, 12/14, Lafont Street, Tower Bridge, London, S.E.1.

AUSTRALIA.—Representative of leading London House, with highest credentials, is shortly taking up residence in Australia, and is open to accept Agencies (sailing in September). P.C.B. 104/31, Office of this Paper.

WEST OF ENGLAND AND SOUTH WALES.—Part-time Representative, with live connection, calling upon Retail Chemists and wishing to take up a further commission which will not clash with lines already handled, should communicate with advertiser, giving full particulars as to present agencies, ground covered, commission, etc., to 66/205, Office of this Paper.

SHAVING BRUSHES.—Leading factory, with many Specialities, with large connections all over the world, is open to appoint an Agent for Greater London who has a good connection amongst the Wholesale Firms of Druggists', Chemists' and Hairdressers' Sundries. Address full particulars, with references, to Gebr. Regensteiner, Brush Manufacturers, Nuremberg (Germany).

TO MANUFACTURERS AND IMPORTERS.—Agencies (commission) for good selling and advertised Chemists' and Hairdressers' lines wanted by Douglas Kirby & Co., Ltd., Monkey Strop Manufacturers, Gloucester; own salaried Representatives and cars, with good connection amongst Wholesale and Retail trade; after trial Douglas Kirby & Co., Ltd., are prepared to buy selling lines in wholesale quantities.

TO WHOLESALE'S AND MANUFACTURERS' AGENTS.—A firm of highly competitive Toilet Article Manufacturers, possessing excellent premises, formulae, and the necessary capital for buying in large quantities and financing trade credit, but not possessing the necessary sales organisation, desires to meet a firm with an organisation of Travellers working the whole or part of the country with a view to Sole Representation among Chemists and Hairdressers; several hundred existing accounts will be handed over. 116/13, Office of this Paper.

PARTNERSHIPS.

MIDLANDS.—Opening for young qualified man as Partner in completely stocked new Pharmacy; N.H.I.; capital required £200; splendid opportunity; industrial district; low rental; lease 7 years, option of renewal. "Bona-fide," 114/26, Office of this Paper.

A GENTLEMAN is required, with about £500, to control a remunerative Pharmacy and Toilet Business, a satisfactory man of good address and able to command and develop business will be given the opportunity later to take over the business. Reply, giving full details, to Edwards & Flanders, 277-8 Bank Chambers, 329 High Holborn.

WANTED, Partner, well acquainted with Pharmaceutical Specialities, to constitute Limited Company for further development of French Specialities already well known in U.K. Apply 113/25, Office of this Paper.

We desire particularly to draw the attention of Colonial and Foreign Subscribers to the fact that in cases where they require partners, agents or assistants, or wish to sell their businesses, an Advertisement in this Supplement, placed in every copy of "The Chemist and Druggist," should be the readiest means of helping them to attain their object. The tariff for such announcements is given under the appropriate headings in the Supplement. Instructions and remittances can be sent to us direct or through the advertisers' correspondents in this country.

SITUATIONS OPEN.**RETAIL.****[HOME.]**

6s. for 40 words or less; 6d. for every additional 10 words or less, prepaid.

BARNES.—Junior or Improver wanted for good-class Dispensing and Retail, with Photography. Apply, stating age, height, salary, and experience, to Feltwell & Son, 90 Church Road, Barnes, S.W.13.

BARRY.—Junior Assistant required immediately for good-class business; must be well up in photographic and experienced in other branches. Please give full particulars re age, height, salary required, to R. L. Hopkins, 88 High Street, Barry, Glam.

BIRMINGHAM.—Junior (male) wanted; must have had good business and experience and knowledge of Photography. Apply, stating salary required, previous experience, and when disengaged, to Blue Star Drug Co., Ltd., 117 Albert Road, Aston, Birmingham.

BIRMINGHAM.—Qualified Minor Assistant wanted; must be quick and accurate Dispenser; no Sunday or Bank Holiday duty. Apply, stating salary required, previous experience, and when disengaged, to Izon, 86 High Street, Aston, Birmingham.

BIRMINGHAM DISTRICT.—Wanted, from August 10 to September 12 (inclusive), Locum with Minor qualification; also, for same period, Hall Dispenser with Retail experience; ladies preferred; live outdoor; state salary required, references. Apply Egginton, Chemist, Abbey Road, Lower Gornal, Staffordshire.

BRISTOL.—Qualified Assistant required immediately; working-class district; N.H.I. and Counter; obliging and willing; moderate salary. Apply, stating age, and full particulars, to 115/33, Office of this Paper.

CARDIFF.—Wanted, Qualified Man, about 30, for new business shortly. Write, stating full particulars and enclosing photo, 118/26, Office of this Paper.

CITY.—Wanted, qualified Manager for good-class business. State age, height, particulars of experience, salary required, when free. P.C.B. 88/11, Office of this Paper.

CROYDON.—Young unqualified Assistant for brisk business; must be quick and accurate Dispenser. Also Relief Assistant for Friday evenings and half or all day Saturday. State particulars of experience, age, height, and salary required. 116/4, Office of this Paper.

EAST COAST.—Unqualified male Junior required for season. Apply, full particulars, age, experience, salary required (outdoor), 115/31, Office of this Paper.

ESSEX.—Unqualified Manager required for small, good-class Drug Pharmacy; trade has been neglected; scope for energy. Apply, giving full experience, age, references and salary required, to 66/209, Office of this Paper.

FULHAM, S.W.—A competent and reliable female Assistant required for a quick Cash business; Dispensing and Counter. Apply, giving full particulars, in first instance to 116/31, Office of this Paper.

LEICESTER.—Qualified lady Assistant required for Light Retail and Dispensing business; must hold Minor qualification, have had Counter experience, and have a knowledge of Photographics. 114/40, Office of this Paper.

LEICESTER.—Young qualified Assistant wanted immediately for Dispensing and Light Retail business. Apply, giving full particulars, with references, to Hearnshaw, 49 Welford Road.

LONDON.—Experienced qualified man required for West-End business; must have good references; age about 35. Apply, with particulars, salary required, etc., to 113/20, Office of this Paper.

LONDON.—Unqualified Assistant, accustomed to good-class Dispensing and Family business. Age and full particulars and salary required to Peel, 7 Half Moon Lane, Herne Hill, S.E.24.

LONDON.—Qualified Man, capable of taking charge, view to Management, for middle-class cash trade; good Counter-hand and Window-dresser; also Lady Assistant. Apply, with usual particulars, to 116/20, Office of this Paper.

LONDON.—Wanted, reliable Locum, to take charge of Drug Department, August 10–24; hours, 9–6 and Saturday 1 p.m. Apply 66/208, Office of this Paper, stating terms and when free for an interview.

LONDON (Belgravia).—Chemist offers free for month August House over business to a Qualified Pharmacist and family provided he would act as Locum few hours daily; daily maid, 9 to 3. P.C.B. 20/50, Office of this Paper.

LONDON, E.—Wanted, immediately, Junior Assistant (male), unqualified, for Counter and N.H.I. Dispensing; write, giving full particulars and salary required, or call after 6 p.m. A J. Millar, 113 Burdett Road, E.

LONDON, N.—A young qualified Assistant required (outdoors); quick and accurate Dispenser, and also good Counterman. State age, salary and experience, and also when disengaged. F. J. Sandberg, 22 Regent's Parade, North Finchley, N.12.

LONDON, N.W.10.—Wanted, part-time Assistant for evenings; also qualified Manager, full time; N.H.I. and Counter. State age, salary, experience. 115/24, Office of this Paper.

LONDON, W.2.—Assistant, Junior, unqualified, male, not over 30, as Dispenser and occasional Counter; share duties with 3; must be good dispenser and accustomed to good class business; please give full particulars, age, height, and salary expected; call or write. H. F. Stapley (Moore & Co.), 45 Craven Road, Lancaster Gate, W.2.

MANCHESTER.—Wanted, at once, competent and reliable Assistant for quick Retail and Dispensing. Apply, with full particulars, Beal, 446 Rochdale Road.

MANCHESTER DISTRICT.—Wanted, immediately, reliable Assistant, capable of taking charge occasionally, for Light Retail and Dispensing business; easy hours. Please give full particulars, experience, age, references, and salary required (outdoors). 110/11, Office of this Paper.

MANCHESTER DISTRICT.—Wanted, qualified Manager, 25–35; must be first-class Salesman and Window-dresser; one used to good-class quick Retail trade and N.H.I.; permanency for right man; full particulars and photo. 79/27, Office of this Paper.

MONMOUTHSHIRE.—Wanted, July 20, Qualified Lady; trustworthy and adaptable; knowledge Photography, also darkroom; permanent berth. Apply, stating age, full particulars and salary required (moderate to commence), enclosing photograph (to be returned), to 118/27, Office of this Paper.

NORTH WALES.—Manager for country branch in Wrexham district; industrial area, but pleasant country; Welsh preferred, but not essential; salary, commission and share of profits; good berth; must be energetic and good Salesman; suit single man, for house not yet available. Full particulars to L. Rowland & Co., Chemists, Wrexham.

ST. GEORGE'S HOSPITAL, S.W.1.—Required, Assistant Dispenser from June 29 to September 12 inclusive; Pharmaceutical Society's qualification; salary £4 per week; hours 9 a.m. to 5 p.m., or longer if required; Sunday duty, two hours every third; age under 40. Applications, with copies of testimonials, to the Pharmacist.

SOUTH WALES.—Qualified Manager for branch; no Sunday duty; half holiday Thursday. Apply, giving full particulars of experience in first letter, also state salary required, 116/28, Office of this Paper.

SUNDERLAND EDUCATION COMMITTEE.

THE TECHNICAL COLLEGE.

APPLICATIONS are invited from candidates for the position of full-time Assistant Lecturer in the Department of Pharmacy.

Candidates must possess the Major Certificate of the Pharmaceutical Society of Great Britain, and preferably some experience in teaching or demonstrating.

Salary according to the Burnham Award. Application forms and further particulars may be obtained from the Principal of the College, and all applications must reach the undersigned not later than Monday, 6th July.

HERBERT REED,

Chief Education Officer.

Education Offices,
15 John Street, Sunderland.
17th June, 1925.

STAFFORDSHIRE.—At once, young qualified male Assistant, able to take charge of General Retail country business; permanency. Full particulars and references in first letter. Garland, Cannock.

S.W.—QUALIFIED Assistant wanted for good-class Store; Windows, Dispensing, Photography. Full particulars to Bird, 24 Market Place, Kingston-on-Thames.

WEST-END.—Junior, with first-class experience, of good presence, required for late duty; a knowledge of French would be advantageous; commencing salary £3 10s. Reply 115/28, Office of this Paper.

WESTON-SUPER-MARE.—Wanted, immediately, unqualified, male; permanency; preferably knowledge of Photography. State age, salary required, etc. Callow, Moorland Road.

WOLVERHAMPTON.—Required, middle of August, capable qualified Chemist (male) to open new branch in pleasant suburb; Light Retail and Dispensing; modern house attached. Apply, Martyns, Ltd., Chemists.

APPRENTICE required in first-class Pharmacy; no premium; short hours; no N.H.I.; very little Veterinary or Agricultural trade; every help given to willing lad. Packer, Chemist, Andover.

ASSISTANT, male or female, for Developing and Printing, accustomed to amateur work, quick and reliable worker, for West of England. 66/198, Office of this Paper.

ASSISTANT, outdoors, male, about 30, for South London; used to modern quick Cash trade. Please give full particulars as to age, recent references, and salary required to 115/39, Office of this Paper.

ASSISTANT required for High Barnet district; good Counter-man, Dispenser and Window-dresser; knowledge of Photography. Apply by letter, with full particulars, to 66/202, Office of this Paper.

BUCK'S PHARMACY, 179 Bedford Street, Liverpool, require experienced, qualified Assistant (male); wages £5 to £6 weekly.

DISPENSER.—Locum Tenens (lady), holding the M.P.S. Certificate, for the fortnight commencing the 13th July next; also Locum Tenens (lady), with the Apothecaries Hall Certificate, for the fortnight commencing on the 4th August next. Apply, stating salary required and full particulars of past experience, to the Secretary, Ancoats Hospital, Manchester.

ELDERLY qualified man required; easy hours; light work; comfortable permanency; provinces. "E. Q.," 114/400, Office of this Paper.

EXPERIENCED Locum required on July 13 for 5 weeks (about). Full particulars in first letter to Atkins & Son, Pharmacists, Salisbury.

IMMEDIATELY.—Smart qualified Junior; preferably one who has a knowledge of Photographic Salesmanship, and who can advise and assist in modern Window-dressing. Please state salary required and previous experience to C. B. Woolons, M.P.S., 28 Kilburn Lane, W.10. Phone: Willesden 762.

JUNIOR Assistant required at once for good-class country business; must be accurate Dispenser; have good knowledge of Window-dressing and Counter work; good progressive post for suitable man; outdoors; full particulars in first letter. Buswell, Lutterworth.

JUNIOR, about 20, with good experience, wanted for business near Manchester; applicants should be good Dispensers; knowledge of Photography an advantage. Please give full particulars, say when disengaged, and the salary expected. Brad-dock & Bagshaw, Ltd., 37 Yorkshire Street, Oldham.

JUNIOR Assistant, unqualified, outdoor, male, wanted for middle of June; Dispensing, Counter, and Photographic. Apply, stating age, height, and salary required, to Charrington, 17 Market Street, Lichfield.

JUNIOR or Improver required in Dispensing and Photographic business, at once for Stock, with some Counter work and Dispensing when necessary; outdoors; unqualified. Davis, Newbury, Berks.

JUNIOR Assistant wanted; one accustomed to good-class Retail and Dispensing Business. Please give full particulars of age, height, experience, salary required (outdoors), and enclose photo. E. Bing & Son, Pharmaceutical Chemists, Canterbury.

JUNIOR Assistant required, male, for Counter and Dispensing; quick and accurate Dispenser, with knowledge of Photography. Please send full particulars of experience, references, and salary required to Wood, Chemist, West Bromwich.

JUNIOR Assistant wanted immediately; one accustomed to good-class Retail and Dispensing business. Apply, with fullest particulars, to Davies, Pharmacist, Lyndhurst, Hants.

JUNIOR Assistant required for relief ten weeks from July 6; London suburb, £3 5s. weekly. Usual particulars to "J. P.," 66/200, Office of this Paper.

JUNIOR Assistant wanted at once for good-class Dispensing, Retail and Photographic business; please state age, references, and salary expected (outdoors). Applications not answered in four days declined with thanks. S. P. Sayers, Pharmacist, 7 Brent Street, Hendon, N.W.4.

LADY (qualified) wanted for branch business; no heavy trade; no Sundays; Wednesday 1 p.m. Apply, with photo (returnable), stating previous experience and salary required, to Jas. Wood, Ltd., Chemists, Ilkeston, Notts.

LADY Dispenser (resident) required at Royal Sea Bathing Hospital, Margate; short dispensary hours; preference will be given to applicant qualified to also take the post of Assistant Masseuse. Apply, stating salary, with references and photograph, to the Matron.

LADY Dispenser, with some Retail experience, required for London district. Apply, with full particulars, to 66/204, Office of this Paper.

LADY, Minor qualifications, for Dispensing Business, with N.H.I. work; easy hours; permanency; Devon. Full particulars to 115/34, Office of this Paper.

LADY Assistant (qualified), light Retail and Dispensing, for Lancashire town. Please state full particulars of experience and salary required, with references. "Sperax," 117/27, Office of this Paper.

LARGE Departmental Stores require Qualified Locum for fortnight commencing July 11; pleasant locality; good-class trade. Send full particulars by letter to Manager, Welwyn Garden City Stores, Herts.

LOCUM, qualified, wanted for August. Give full particulars, by letter, to the Secretary, The Hartlepoons Co-operative Society, Ltd., Stockton Street, West Hartlepool.

LOCUM, unqualified, required for three weeks commencing July 3; experienced Dispenser. Apply Lloyd, Chemist, 260 Upper Street, N.1.

LOCUM for one month, from July 20 (outdoors); gentlemanly, capable, and energetic. Letters only, with terms and references, to H. Marshall, 91 West Green Road, N.15.

LOCUM, unqualified, or elderly qualified, wanted for 21 days, commencing July 19. Please give full particulars, etc., to Nix, Chemist, Billericay, Essex.

LOCUM, qualified, reliable, all-round man, London and suburbs, from August 10. State periods at liberty, August, September and October, experience, and salary required. Goodall, 182 Ealing Road, Wembley.

LOCUM (gentleman), for N.H.I. Dispensing and general Counter work, for six weeks from July 20. Terms and full particulars in first letter, please. J. Marlar & Son, Ltd., Chemists, Halstead, Essex.

LOCUM, qualified (lady or gentleman), for fortnight commencing July 4 (or near date). Full particulars as to salary required, etc., to "Pharmacist," 203 Sandycombe Road, Richmond, Surrey.

MANAGER, qualified, with good Optical experience; good house attached; Northants district. Apply, with references, age and experience, to Lands, Chemists, Coalville, near Leicester.

MANAGER, qualified, required for Family, Retail and Photographic Business in London district; scope for capable man with good personality. Apply, with full particulars, to 66/201, Office of this Paper.

MANAGERS, qualified, wanted for Branch Shops, one to live over premises; must have good all-round experience. Give age, height, experience, salary required. Wands, Ltd., 12 Haymarket, Leicester.

MANAGER wanted immediately; qualified; good Salesman, Dispenser. Widgery, 442 Uxbridge Road, W.12.

MESSRS. WALLAS & CO., Ph. Chemists, 36 New Cavendish Street, W.1, require at once a Qualified Junior Assistant. Send full particulars, stating when disengaged and salary required.

MINOR qualification, lady or gentleman, wanted; young, active, accurate; understand Photography and Dispensing; willing worker and tactful; must have undeniable references; outdoors. Frank Ullett, 198 Rye Lane, London, S.E.

PART-TIME or full time; Junior, competent and reliable. Apply personally, if possible, Carter, Chemist, 453 Romford Road, Forest Gate, E.7.

PART-TIME Assistant; qualified; London, W.; each Thursday and alternate Sunday evenings; good Counterman and Dispenser. State experience and salary required. 117/3, Office of this Paper.

PHARMACISTS wanted as Managers of new Branches; permanencies and good prospects. Timothy White Co., Ltd., Portsmouth.

QUALIFIED, single, for small good-class branch; middle-aged or lady considered if smart, pushful, and with method. Apply, with full particulars and salary required, Richard Evans, Surbiton Park Terrace, Kingston-on-Thames. Tel.: 372 Kingston.

QUALIFIED Manager, energetic, to work up new branch; one with experience as Manager preferred; age 28-40. Full details of experience, age, height, salary (by letter) to Able, 13 King Edward Parade, Norbary, S.W.

QUALIFIED Assistant required at once; reliable Dispenser and used to good-class Counter trade; knowledge of Photographic desirable; permanency. All particulars in first instance. S. Edwards & Son, Pharmacists, Godalming.

QUALIFIED Assistant required in high-class seaside Dispensing business; state age, salary, two recent references, if possible; permanency to right man. 113/24, Office of this Paper.

QUALIFIED Assistant; must be quick and experienced Dispenser, N.H.I., good Window-dresser, and Counterman. Apply, giving full particulars, to H. E. Graham, Ltd., Chemists, Burlington Street, Bolton.

QUALIFIED Assistant wanted at once near Doncaster; age no barrier; duties exceptionally light and easy; permanency right person; give full particulars in first letter. "Chemist," Christ Church Road, Doncaster.

QUALIFIED Assistant wanted, S.E. London; N.H.I. Dispensing and Counter. Apply by letter, giving age, salary required, and previous experience, to 113/34, Office of this Paper.

QUALIFIED Assistant (lady or gentleman) required for high-class business, with good Counter and Photographic experience. Send full particulars, stating when disengaged and salary required, to H. S. Martin & Co., Church Street, Weybridge, Surrey.

QUALIFIED male Locum required for Public Institution for six weeks commencing the 6th July; Hospital experience essential; salary £5 10s. per week, with dinner and tea daily. Apply, with copy recent testimonial, to the Clerk, Board Room, Leighton Road, Leytonstone, E.11.

QUALIFIED Assistant for Branch, not above 30; accustomed to quick cash trade. Please send all particulars, state salary required, when disengaged, and photo, if possible, to Es, Ltd., Chemists, 30 New Road, Wilkenhall, Staffs.

QUALIFIED Assistant for brisk business in quiet country town; abstainer; good worker and absolutely trustworthy; moderate hours; permanency for a good man. Apply, with particulars as to age, experience, salary (outdoors), etc., to G. M. Kins, Chemist, Knighton, Radnorshire.

QUALIFIED Assistant wanted early in July; some knowledge of Photography preferred. Apply, stating age, height, salary required, and references, to Fawcett, Bebbington, near Kenhead.

QUALIFIED; abstainer preferred; £4. Wright & Son, Burton-on-Trent.

QUALIFIED Locum, lady or gent., wanted second week in July for fortnight, for busy trade in agricultural town. Apply Ellwood, Leominster.

QUALIFIED required, with initiative and enterprise, to work up Chemist's Department in a new business; Midlands; salary and commission; modern shop, requiring enterprising management; references must bear every investigation; state salary, in confidence. 115/40, Office of this Paper.

RELIABLE, experienced Assistant for good-class Family and Photo Business. State full particulars and salary expected. Postlethwaite, Chemist, Hoddesdon, Herts.

RELIEF man required, Tuesday and Friday afternoons, 1.30 till 8; West-End. All particulars to R. W. Walden, 65 Abchurch Lane, S.W.

SMART, unqualified Assistant; all-round, reliable man. Full particulars to Bird, Durbin's Drug Stores, Kingston-on-Thames.

PHARMACEUTICAL SUNDRIES.—An experienced female Assistant, not over 24 years of age, is required in the Patent Medicine Department; preference given to one accustomed to Store trade. Apply Staff Manager, Lewis's, Ltd., Ranelagh Street, Liverpool.

TEMPORARY Assistant required for about three months; age not over 26. Reply by letter, giving particulars as to experience, salary, and references, to Harrington, 15 Kensington Street, W.

THOMPSON & CAPPER, LTD., require an unqualified Assistant at their Branch, 51 Piccadilly, Manchester; must be used to a good-class business and have good knowledge of the Photographic Trade. Please apply, giving full particulars and enclosing a photograph, if possible, to Thompson & Capper, Ltd., Manesty Buildings, College Lane, Liverpool.

TWO unqualified Assistants wanted, one for three months and one for permanency, for Light Retail, Dispensing and Photographic business. State age, height, experience, salary required (outdoors), with recent references, to P. R. Hill, Pharmaceutical Chemist, 90 High Street, Gorleston-on-Sea.

UNQUALIFIED lady Assistant required immediately; Counter and Dispensing; state salary and experience. Glaister, 779 Abbeydale Road, Sheffield.

UNQUALIFIED male Assistant wanted immediately; single; age about 24. Apply, with full particulars and recent testimonials, to Weatherhead, Chemist, 485 King's Road, Chelsea S.W.10.

UNQUALIFIED Assistant (male), with quick Counter and Dispensing experience; good references essential. Full particulars, photo and salary required (outdoors), to S. Paddon, M.P.S., 657 Attercliffe Road, Sheffield.

WANTED, qualified lady or gentleman (Minor) for two weeks, either June 30 or July 7; elderly or otherwise; easy post; £3 weekly, dinner and tea. Apply Brown, Chemist, 2 Crawford Terrace, Crawford Street, W.1.

WANTED immediately, energetic, Unqualified Man; must be an organiser, pushful and capable Counter-hand, with good all-round Retail experience, including Photographics. Apply personally any evening between 8 and 9, The Standard Drug Stores, 122 Church Street, Stoke Newington, N.16.

YOUNG lady, with good Counter experience, required for Drug Department of good-class country Stores; no Sunday duty. State full particulars and salary required outdoors (or indoors); comfortable berth. Roys, Wroxham, Norfolk.

YOUNG Junior or Apprentice wanted at once. Personal application to Foster & Dallas, 1 Lavender Hill, S.W.11.

YOUNG Lady, who can speak French, required for Book-keeping and Typing; shorthand not essential. Apply Dixon, 13 Clifton Road, Maida Vale, W.9.

WHOLESALE.

DRUG Bottle Label Writer; Journeyman, to work Branches for London Chemists. Full particulars to 66/203, Office of this Paper.

FIRST-CLASS Salesman will shortly be required to introduce new non-combine Soaps to trade in London and district; goods and prices are attractive, and preference will be given to a gentleman who is known to all the large buyers; remuneration will be on exceptionally good scale, and only those men who feel confident of success should apply. Please give full details of experience, etc., in first letter to W. A. Poucher, Managing Director, R. F. White & Co., Ltd., Victoria Station House, S.W.1.

QUALIFIED Chemist required by Messrs. Sangers to represent their Drug and Chemical Department, calling upon Chemists in London and suburbs. Apply, by letter only, to "C," c/o Sangers, 258 Euston Road, N.W., stating experience and salary required.

REPRESENTATIVE, with connection, wanted by importers to carry a side line on commission. Apply, in confidence, stating lines now carrying, "W. G." (P.C.B. 86/22), Office of this Paper.

REPRESENTATIVES, calling on Chemists, Hairdressers, R. Stores, etc., required to sell high-grade Tooth Brushes on commission. Give full particulars of experience and actual district covered. Apply, by letter, to 66/194, Office of this Paper.

REPRESENTATIVES, calling on Chemists, Grocers and Ironmongers, wanted to introduce valuable series of Proprietary filling definite demands; strong and seasonable lines, with novel demonstration features; good trade discounts and good commission. P.C.B. 88/5, Office of this Paper.

REPRESENTATIVES calling upon Chemists and Stores on the East and West Coast of England, including Devonshire, can hear of a high-class Toilet Preparation to handle as a sideline; exceptionally good commission. Apply by letter only to Danso, Ltd., 29 Rathbone Place, Oxford Street, London, W.1.

REPRESENTATIVES to call upon Hairdressers and Toilet Salons with complete range of Toilet Preparations, packed in and bulk; commission basis; liberal terms; territories—Northumberland and Durham, Yorkshire, Westmorland and Cumberland. 116/21, Office of this Paper.

REQUIRED, Junior Clerk, about 18; must have had previous experience in Wholesale Druggists' office; good writer and quick at figures. Apply, by letter, "G. R.," Wright, Layman & Umney, Ltd., 46 Southwark Street, S.E.1.

VERY old-established makers high-class Shaving Brushes require Representative, already calling on best-class Chemists in Wales, to carry their Brushes as a side line on commission basis only. Reply 66/197, Office of this Paper.

20 PER CENT. COMMISSION.—Quick-selling side line, well-known Speciality; sells 3d. and 6d.; territory open, London, Eastern Counties, Western Counties, and South Coast; small samples; novel show matter. Write particulars, in confidence, Sales Manager, 123a Church Street, Croydon.

[COLONIAL, INDIAN AND FOREIGN.]

INDIA, BURMA AND CEYLON.—Travelling Representative required by Export Druggists well known in these markets; previous similar experience essential; travelling expenses and commission. Full particulars to 66/196, Office of this Paper.

NEWFOUNDLAND.—Representative for Newfoundland required by important Wholesale Drug and Druggists' Sundries House; good Pharmaceutical training essential; qualified man preferred; duties to visit Newfoundland twice per annum; period of absence on each occasion approximately one month. State age, qualifications, houses represented, and lines handled. 66/195, Office of this Paper.

PARIS.—A qualified Chemist is required by a large firm of Manufacturing Chemists in Paris to take charge of English, Colonial and American trades; must have perfect knowledge of French, able to assist with buying, organise, and control office staff. 66/199, Office of this Paper.

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